

## Mills and Dams on the Carson in Words and Pictures

### The quartz mills, 1860

Of that mighty triptych of enterprises which flourished from 1860 to 1895 in the triangle, the apexes of which are marked by Virginia City, Empire City, and Dayton, there are today only the remnants of the past preserved in the three towns and almost nothing at all along the Carson River which joins Empire and Dayton. Yet it was along this side of the triangle that the most impressive structures of the Comstock days were built. They crushed the thousands of tons of ore that were hauled to their stamps by teams at first and then, after 1869, by the famous Virginia and Truckee Railroad. The mines, the mills, the railroad—in this order—were the very foundation of the industrial empire built by the corporate giants of the era in western Nevada. By name they were William Sharon, John P. Jones and John W. Mackay.\*

These three were surrounded and served by men probably just as able as they who like the mills have been lost to sight in the histories of these times which have focused on the obvious political figures of those days and on their links to the giants. Among the men who lived in the area and worked in these industries was Henry M. Yerington, manager or superintendent of the Virginia and Truckee from 1869 until his death. From his correspondence preserved in the Bancroft Library it is possible to envision almost month by month in the years 1886-1891 the operation of the mills and the railroad and the mines. How they were linked is told graphically in letters written to D.O. Mills, principal owner of the Virginia and Truckee, to William E. Sharon, nephew of William Sharon and to William Sharon's son-in-law and the trustee of his

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\*This account of the quartz mills is limited to when and how they were built, to their operation as determined by the availability of water in the Carson and to descriptions of their condition in 1893 when they were all but shut down. Many of the mills and the dams and ditches were destroyed in the great flood of 1907. This disaster was recorded by Herman Davis in his pictures.

The tons of ore crushed by each, the years in which each was in full operation, the types of machinery form a vast body of material which, as far as is known to this writer, has never been systematically investigated. This would be a very fruitful field for study. It could be pursued in the *Mining and Scientific Press* where frequent references are made to one or other of the mills, their periods of operation, their capacity, their owners and operators.

estate. Francis G. Newlands. A letter written on 4 September 1886 to Sharon and Newlands reads:

MAJOR  
COMSTOCK  
REDUCERION." → The Savage Co. desire to erect a 20 stamp mill to reduce their ores and want it on the Carson River, otherwise they will build a mill near the mine at Virginia. Its my opinion that would be far better for the V.&T. R.R. Co. to have mill on the river for it gives us the *ore hauling* together with the *furnishings of the mill Castings* et from our shops. In the other event they would get their foundary work done in Virginia and the only hauling for us would be the wood consumed by the Mill. On his late visit this matter was presented to Mr. Mills and he requested me to lay it before you for considera-

In the same vein he wrote to D.O. Mills who lived in New York City, that he thought the Potosi Company had decided to erect a mill at Virginia, "altho we did all we could to get it built on the river."

Further evidence of the interdependence of the three enterprises is described in a letter to Mr. Mills dated 26 March 1887.

→ "I regret to say that our business this month has been quite light owing to shutting down of Crown Point, Belcher and Overman mines . . . Consequently Santiago, Vivian and Mexican Mills have not been running. They however have been overhauling and making some extensive repairs.

"Consequent on the stoppage of the mines named above our ore lumber and wood shipments have fallen off considerably."

A number of letters written by Mr. Yerington to Mr. Mills in the drought years of 1887-1889 emphasize the critical impact of the weather and the Carson on the operation of the railroad and of the mills. Extremes of cold and heat or drought delivered sharp shocks to the two enterprises. At times they could, for unstated reasons, operate successfully in spite of the weather, thus on 10 November 1887:

"Altho we have no rain & Country very dry business on the V.&T. is POSSIBLE improving—we are now shipping 620 tons of ore daily to mills on river—a MEAN few hours rain would increase that very considerably." AVERAGE

And on 10 January 1888, he wrote: "The mills are taking a good deal of ore notwithstanding the cold weather is effecting the river seriously." And, on 25 January 1888 " . . . the mills on the Carson were frequently shut off by the extreme cold, ice, et

→ With the hazards of winter over, Mr. Yerington wrote on 5 March 1888, "Yesterday we commenced hauling ore from the Norcross to the Mexican Mill."

An optimistic note was also sounded on 21 May 1888 when Mr. Yerington reported that, " . . . our daily delivery of ore to the Rock Point Mill is 75 tons, and is likely to continue for a long time to come." The prediction proved premature. On 24 June 1888, Mr. Yerington was compelled to write: "The weather is now very hot & will soon effect the river altho, I think the mills can run till 1st of August."

By 9 July 1888, there was a different story to tell:

"For several days past the weather has been extremely hot and Carson River has fallen very seriously, but I attribute it to the ranchers taking out the water by wholesale, the mill men having neglected to prevent it as they have the power to do, altho I have been steadily urging them the past six weeks to see to it, but Sam Jones.\* Morrison and all the rest of them are dead on their feet and Mackey as well when matters of general interest are to be attended to! I fear the result will be the closing of the river mills at an early day—much sooner than anyone expected—giving us a long, dull spell same as last year which made us all sick and sorry."

Another report on the conditions was made on 21 July 1888:

"As I feared the water in the river has almost completely failed & of course the water mills are all about hung up. The mill men are now making desperate efforts to get the water back into river from the Ranchers with considerable success and I think things will soon improve and that the mills will do much better than they did last season provided the mill men stick & hang for the water which I shall keep urging them to do—as it is July won't be a very good month for either road. The C.&C.\*\* suffers in consequence of the Rock Point mill being shut down for want of water."

Six days later on 27 July 1888, Mr. Yerington wrote: "Business this month has been only fair owing to short water in Carson River, but that has improved somewhat during past few days, the mill men having forced the Ranchers to stop irrigating largely."

The effect on the railroad was severe as stated in a letter dated 25 August: "Receipts were much diminished in consequence of low water in Carson River, and the operations of this month will be still more seriously effected for the same reason." The powerlessness of both the mill men and Mr. Yerington to order the weather was truthfully stated by the latter on 30 August: "I regret to say that business continues very dull with us—its an unusually dry season all over the Coast. Carson and Truckee rivers are about dry, causing a general stagnation in mining and milling which is likely to continue for another month or so."

Early in the next year the specter of low water hovered over the railroad and the mills. On 10 February 1889, Mr. Yerington anticipated it, concluding his letter, as was characteristic, on a note of optimism.

"Things have been very quiet and I regret to say our business accordingly quiet. It will be less this month than last owing to the continual fair, dry weather—its truly wonderful, just like summer—people here and in Cal. are becoming alarmed that we are to have a very dry season. Altho, I am strong

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\*Sam Jones was the brother of U.S. Senator John P. Jones.

\*\*The Carson and Colorado.

in the belief that we shall have heavy snow storms and a wet spring before we are through. As it is we are suffering from *low water in Carson river* and our business feels it very seriously." [italics supplied]

On 26 August he wrote that the want of water in the Carson had curtailed the railroad's receipts. "as shown by the enclosed accounts." A month later (26 September) Yerington made a similar report and on 11 October he advised Mills:

"I do *hope we shall soon have rain* and plenty of it for the country is suffering greatly. The Carson River water suits have been issued against 113 ranchers. On Sunday they are to have a big meeting at Genoa and F.G. Newlands is to address them. I trust he can induce them to settle the water **BISSEST** matter in a satisfactory manner."

**NOTE** The final word sent on 26 October was that "continued low water in the Carson River prevented any increase of business hence it was no better than August—in fact, not quite so good. On Tuesday last it commenced raining and today we hauled ore from → the Con Cal Va mines to the Eureka mill being the first shipment since July. The river is rising and indications are that the river mills will be running full during the next few days."

And at the mills along the Carson, saws screeched, stamps thundered and the waters of the unpredictable stream rushed and foamed down its rocky bed.

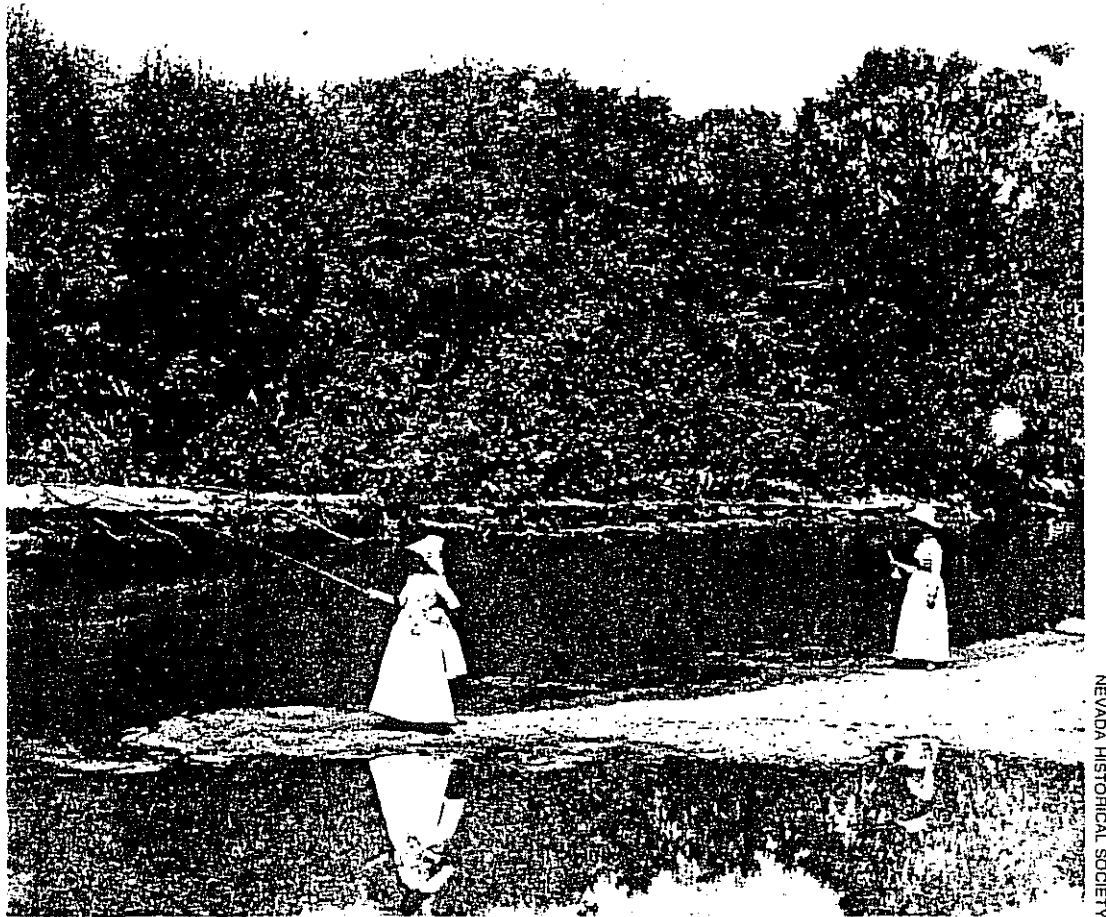
Away from this life line of energy, a boy could roam the hills:

"... and troops of boys thronged the mills day after day. The barren appearance was deceiving: many kinds of flowers grew in the sagebrush and on the cliffs. Ground squirrels and chipmunks and lizards were everywhere. Rabbits had been plentiful until the hunters decimated them. An occasional rattlesnake started a big commotion. The birds were few and almost confined to rock wrens, linnets, cat birds, and blue birds, with perhaps a robin in a canyon where there was water. It was a regular thing to take a lunch and tramp all day over the hills, and return with a squirrel in a cage or a linnet, and always with flowers.

Then there was swimming — not in the 'old swimmin' hole' but in the 'slum ponds' where the mills settled their slimes, from which boys would emerge looking as if they had been whitewashed. After all, a boy's heart is the thing—a boy's heart and freedom." (Grant H. Smith papers, Bancroft Library, p. 244)

This boy's sisters and his mother perhaps could fish the quiet waters above the canyon, so delightfully described in the *DAILY STATE REGISTER* for 19 May 1871:

"The warm weather is causing the water in Carson river to raise very rapidly, and a continuation of heat will no doubt cause something of a flood. All along the river the trees are in leaf and wild flowers in profusion. A ride along the banks is very pleasant at this time. The Santiago mill is the best location of any on the Carson, and the surrounding grounds are now beautiful to see. It is a sweet spot for picnics."



NEVADA HISTORICAL SOCIETY

Recreation on the Carson in the nineteenth century.

As a rare diversion, a party could be formed for a ride on the V.&T. to the river canyon, there to enjoy a personally conducted tour through one or two of the mills. Early on May 25th in 1872 such a party left Carson City to go to Empire City, that "far famed sand hill," as the reporter termed it, indicating probably that the town was subject to flooding in the spring from the high waters of the Carson. They arrived at the Morgan mill at 8:30 and were piloted through the mill by the foreman and architect of it, Mr. Lockwood. It was an agreeable tour without noise for the reason that the mill was not running. The crew were busy "sewing up sacks containing bullion, for shipment to the Branch Mint at Carson. They had 670 pounds, being the proceeds of a few days' run. Everything round and about the Morgan is in fine order, and was probably never in so good condition before. We found superintendent John Hanson and his amiable lady preparing for breakfast and having taken our matutinal meal, left

for a sight of the wonders of the city proper. Things in Empire are quiet, as usual. Stadtmuller's store seems to be well patronized. The river is now so high that a very pleasant walk can be had on its banks. We found Judge Morris and Jeffers, telegraphic operator, reclining on the grassy slopes of the river banks, discanting on the beauties of nature and trying to ascertain whether trout went up or came down stream to spawn. We set them right in the matter. Tom Beer we found in his meat market, which, by the way, is a very neat institution of the kind. The Beer Bros. are doing a very nice business in their store as well as market, and are no doubt acquiring a competence rapidly. John Richey we did not see, but were informed that the party on Wednesday evening was a very comfortable and jolly arrangement. Our highly esteemed and learned friend, S.E. Jones, hitched his two beautiful white pintos to a fancy buggy and honored himself by driving us to town. The Carson river is very high, nearly as much so as last Winter, and will no doubt be quite so in the event of the weather turning hotter; at present the cold winds prevent the melting of the snow in the mountains. The Mexican mill is also shut down for a few days, owing to a disarrangement of the pumping gear in the Crown Point mine, and consequently no ore is arriving from there."

It was not always so pleasant along the canyon. A fire could break out and cause disaster; such an event did occur on the morning of 28 October 1887. Mr. Yerington wrote Mr. Mills:

"The early train of this morning for Va City in passing the Eureka Trestle set it on fire. Word was telegraphed us here soon after. Our yard engine with fire apparatus was sent up at once and fortunately succeeded in putting out the fire without much damage. I drove up with our head Carpenter and after getting today's train of ore delivered . . . examined the trestle and found that it will require about 15,000 ft. of lumber and work of our carpenters some 4 or 5 days to put the structure in good order. In meantime we can manage to give the mill its 100 tons of ore per day so all will be kept running. No rain yet, everything is so dry that we are liable to a fire somewhere every hour. I am taking every possible precaution against it."

Three days later (1 November 1887), he wrote:

"Went up yesterday and made a further examination of Trestle as our repairs have developed more decayed which we have been replacing to extent of nearly one quarter Trestle—its wonderful how rapidly those lumbers decay."

The sequence of events which occurred along the Carson during the drought years of 1887-1889 and which have been described in the letters H.M. Yerington addressed to D.C. Mills followed, in large part, a pattern described in the drought year of 1871.

Dan DeQuille was then local editor of the *TERRITORIAL ENTERPRISE*. On 27 July 1871, following an account in its issue for July 14 in which it was stated that the water in the Carson had decreased rapidly in the past three or four days because of a spell of very hot weather, the column of the paper carried this ebullient comment on the weather change:

“The weather yesterday was cool and delightful: the thermometer ranging from 72 to 76. and a pleasant breeze. bearing upon its bosom the aroma of sage. prevailing. This sageiferous breeze playing upon the pates of the bald-headed caused a great shooting of young hairs. No use of buying white sage decoctions for the hair when the pure. volatile hair-starting principle it contains loads every zephyr.”

It was another story a week later. On 3 August the *ENTERPRISE* reported that:

“The water in Carson River is at present so low that few of the mills can run the whole of their stamps and some have been shut down over half. The mills say there would be plenty of water but that some thousands of inches are diverted by the ranchers on the upper waters of the stream. The ranchers hold that this water is not lost—that it finds the way back into the river again—while the millmen assert that it all evaporates. The water will be needed by the farmers for another fortnight and meanwhile the mill wheels will revolve but weakly. The millmen do not entertain the kindest feelings toward the ranchers and describe their crops as consisting of ‘six sage bushes and one hill of potatoes’ and offer to bet two to one on the sage bushes. What the ranchers think of the mill wheels we have not heard.”

On the same date the *DAILY STATE REGISTER* in Carson City reported:

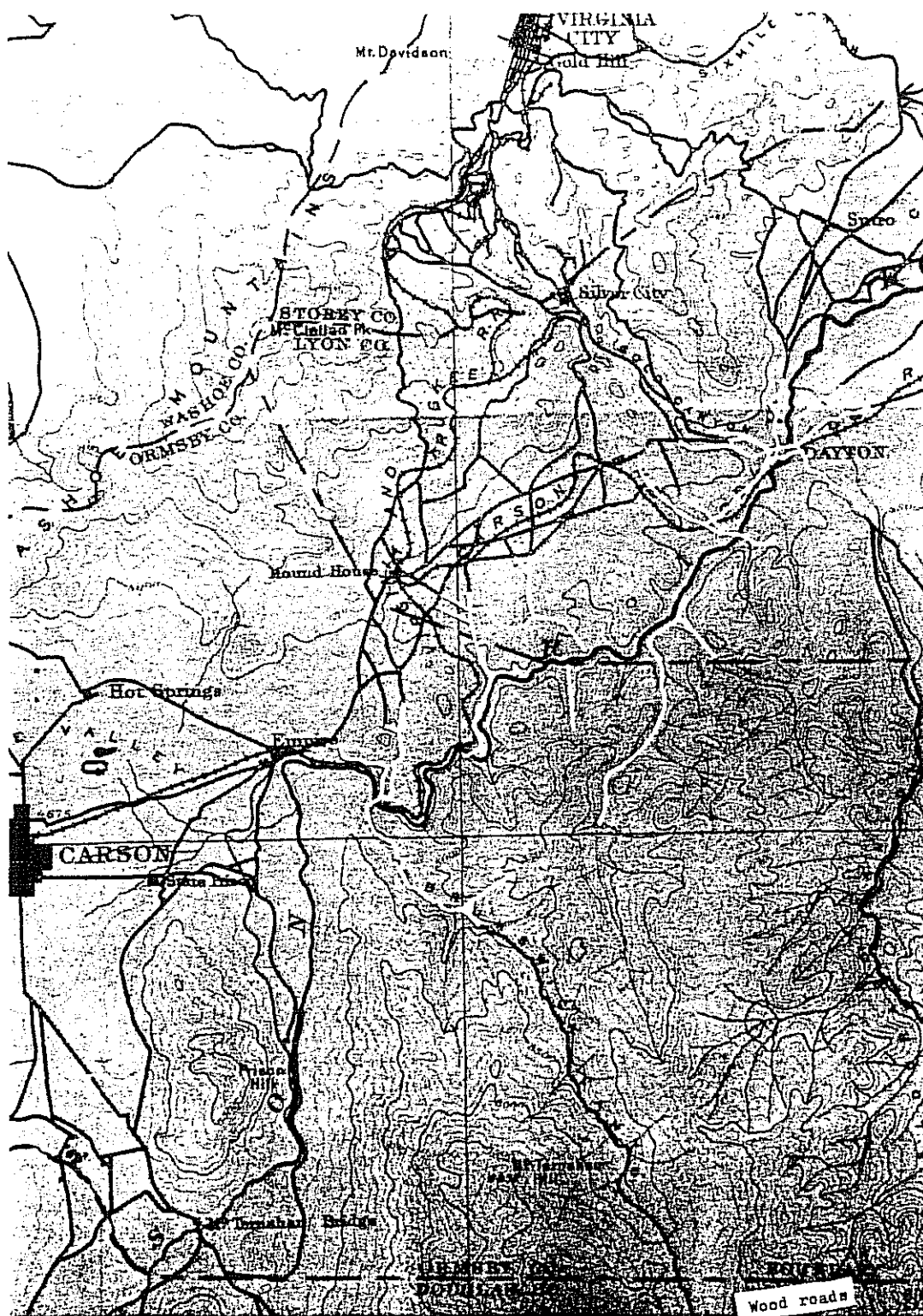
“Complaints are made that farmers along the Carson river toward the head of the valley are allowing the water taken from the stream for irrigating purposes to run to waste. If upon investigation such is found to be the fact litigation will be the result. as the river is low and every gallon of water must be utilized.”

Continuing to report on the river and the mills. the *REGISTER* said on 22 August:

“United States Marshall Lamson leaves this morning for Upper Carson Valley. armed with forty-three sets of papers in the case of the Union Mill Company vs. everybody using water from Carson River. The suits are brought in a court of equity.”

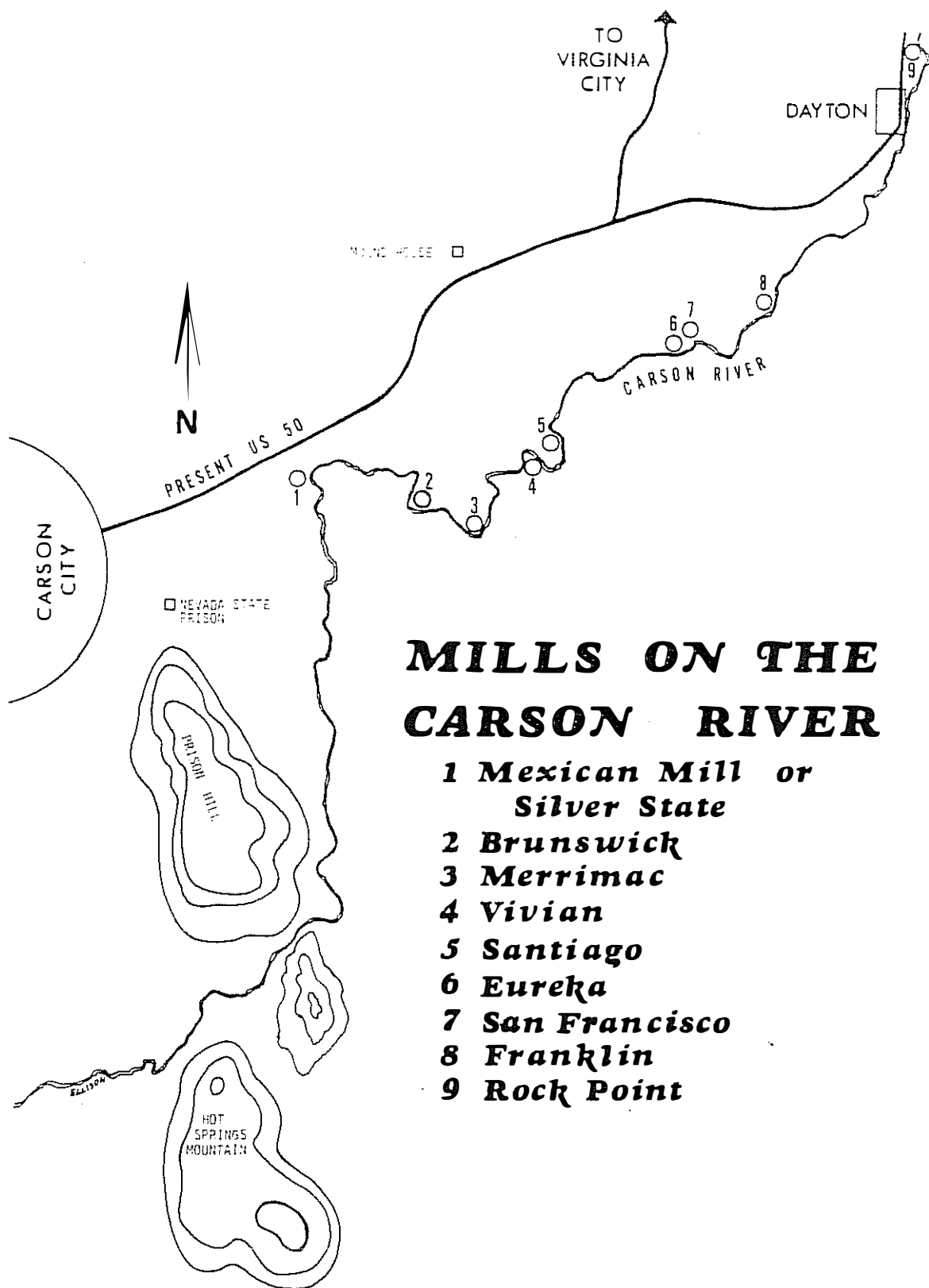
And on 26 August 1871: “The mill men on the Carson river are taking advantage of low water, and are repairing their mills to rush work when the water rises. in the course of a few weeks.” On August 27. the *REGISTER* became more explicit. suggesting that adjustments could be made to the worst of droughts:

“From several mill superintendents who were in Carson. yesterday. seemingly resting on their oars during the low stand of water in the river. we learn that the Merrimac is running very light—barely in motion—on tailings. The Eureka is running thirty stamps and twelve pans; the Brunswick twenty stamps and five pans; the Mexican twelve stamps and four pans. Empire. in consequence. has taken a trip up the flume to abide until the Winter’s flood.”



Wood roads





## Mexican Mill

The Mexican mill was situated three miles east of Carson City and a half mile west of Empire City. (Kelly 1, p. 61) The first recorded document relating to this mill is the Location of Water Privilege by Patterson and Mead, dated 11 September 1860. (520, vol. 13, p. 9)

The mill was officially known as the Silver State Reduction Works. (Kelly 1, p. 61) It came into the possession of Kinhead and Harrington through a deed from Atchinson dated 17 April 1862. (520, vol. 13, p. 20)

The mill was acquired by Union Mill and Mining Company on 31 May 1870 for the consideration of \$20,000. On 15 June 1871 it was deeded to one of the charter members of the Union Mill and Mining Company, Alvinza Hayward. The consideration in this action was \$130,000. Hayward deeded a one-half interest back to the Union Mill and Mining Company on 26 December 1874. A month later on 28 January 1875, he deeded the other half to John P. Jones, United States Senator. The consideration was \$10. These transactions may have played an important part in the political campaigns of 1872 and 1874.

The mill was built in 1861. Kelly, in his second directory (p. 88) says that the mills along the Carson were one of "the principal features of the Territory." Hence, he gives detailed descriptions of them and particularly of the Silver State Reduction Works. In describing this building (pp. 90-91), Kelly says:

"The crushing and amalgamating part of the mill (comprising the stamps, pans, amalgamators, etc.) is contained in a building 186 feet long, by 90 feet broad. The total length of the entire mill is 450 feet. The line shaft is driven by two pinions, which gear directly with spur wheels fitted in segments upon each outer shrouding of the water wheel. So true are these segments placed (each spur wheel consisting of twenty-seven), that not the slightest jar is perceptible. All of the machinery is of the most solid description. The mill has been running for nine months, and not a single stop has occurred by reason of breakage. The millwright (Mr. Railey) deserves great credit for the able manner in which he has performed his work. The wood which is consumed at this mill is cut on a wood ranch owned by the company, and situated at the head of the ditch, down which it is floated to the mill. Another feature of this mill is the completeness of its assay office. This is in a fire proof brick building, twenty by forty feet, erected between the barrel building and furnace shed. The assay office occupies the entire basement of this building. All the bullion produced by the mill is here smelted, assayed and stamped, ready for market. Daily assays are made to ascertain the working of the mill in its various departments. A chemical laboratory is also connected with the assay office. Quite an extensive assaying business is carried on here, independent of that of the mill. In the upper story of the same building is the office of the mill. The windows and doors of this office open directly upon the various departments of the mill, and thus a constant supervision is exercised. Mr. E.B. Dorsey, Superintendent."



The Mexican mill, 1876.

Charles Jones gave an on-the-spot account of how the materials for building the mill were brought together when he was questioned by Counsel Coffin in 1893 under direct examination.

"I lived there under Mormon laws, in 1859, and I remained there until 1869.

Q. What business did you follow while there?

A. I had a mill on Clear Creek, and I also hauled quartz with teams. My mill was just before you get up to the Summit on Clear Creek. Spooner's was on the Divide, and our range was next to Spooner's on the Divide. We had a saw mill there.

Q. Who sawed and furnished the lumber to build the Mexican mill and dam?

A. I did; my men did at my mill.

Q. How much did you furnish for that purpose?

A. Probably twenty thousand dollars' worth. I furnished the lumber for their flume and for their mill and for their dam also. I furnished all their lumber, so far as I know.

Q. In what year did you furnish the Mexican mill lumber for their flume and mill and dam?

A. I think it was in 1862.

Q. Might it have been in 1861?

A. If it was in 1861, it must have been in the fall of 1861; at any rate there was no lumber furnished them at all except by our company.

Q. If other witnesses have testified that the Mexican mill and ditch was built in 1861, would you say it was correct, or would you say it was built in 1862?

A. I don't remember the date; if it was built in 1861, I furnished the lumber in 1861.

Q. If the Mexican mill was crushing ore in 1862, it was in the fall of 1861 that you furnished the lumber to build the mill and flume?

A. Yes, sir.

Q. How many quartz teams did you have at that time?

A. We had ten mule teams. We had ox teams to furnish the lumber to Empire. We hauled the lumber from the mill on Clear Creek to Empire with ox teams. I had mule teams hauling quartz to the Mexican mill; I hauled the first load of quartz that was hauled to that mill.

Q. Can you fix the year that you first hauled quartz to the Mexican mill?

A. I cannot find my books; if I could find my books, I could tell to a day. It was in 1861 or 1862. The only way we had to get to the mill was through Jacks Valley, and we hauled the lumber down from Clear Creek through Jacks Valley, and went down to the river, and down to Empire.

Q. You didn't go from the mill down the steep part of the hill?

A. No, we went by the way of Jacks Valley, and then on down to the river.

Q. Where did you get your hay and supplies for your teams?

- A. At Dutch Fred's and Nigger Palmer's, and Van Sickles', and Klauber's and old man Winters' and a man named Jones.
- Q. By Nigger Palmer, you mean Ben Palmer?
- A. Yes, although they called him Nigger Palmer; he was one of the best men in the valley.
- Q. And the man you speak of as Dutch Fred, you mean H.F. Dangberg?
- A. Yes, I think that is his name.
- Q. Were you familiar more or less with the mills on the river and the ranches in the valley, in 1861-62 and 1863?
- A. Yes, I went to the valley after hay often; I bought the hay we used from the ranchers up in the valley.
- Q. Whether it was in 1861 or in 1862 that you furnished the lumber to build the Mexican mill and dam and flume, was the mill put in operation immediately after you furnished the lumber and it was built?
- A. They were building the mill at the same time that they were building the flume, and when the flume was done the mill was pretty near ready, and then I went right away to hauling quartz to the mill. I think I was the only contractor the mill had." (520, Plaintiff's vol. 2(4), pp. 652-655)

According to W.B. McSherry, the mill was burned down in 1861. He said in response to direct examination by Counsel Coffin:

"The Mexican mill was burnt down, I think, in 1861. I am almost positive it was in 1861; it was burnt down in 1861.

- Q. Was it rebuilt immediately after?
- A. I have forgotten, but I think it was burnt down in 1861. Some years ago I was talking to William Butler of London, who was one of the principal owners of the Mexican mill, and he said he had lost a great deal of money there; my recollection is it was burnt down in 1861 and it was immediately rebuilt." (520, Plaintiff's vol. 2(4), p. 669)

W.D. Torreyson, a blacksmith and wagon maker who lived in Carson City and who was also on the spot in 1860, testified under cross-examination by General Clarke:

"Have you any recollection now of any special and particular time when you first saw the Mexican mill?

- A. Yes, I first saw it when they were constructing it in 1861.
- Q. Do you remember being at the mill yourself when they were building it?
- A. I remember it well. John Atchinson was constructing it, and he owed me a large sum of money that I never got, and I remember the fact.
- Q. But you have no independent recollection about the water right and the amount of power the Mexican mill had in the year 1861?

- A. No recollection, only that I remember the mill was run by water power. I cannot say how much power they had though.
- Q. But as to the size and extent of their ditch you made no observation of that at that time that you now remember and can testify about?
- A. The only recollection of that which I have is that I was along the ditch with old Uncle John, as we called John Atchinson, and he said he was going to use an overshot wheel." (520, Plaintiff's vol. 1, p. 120)

Milton R. Elstner, under direct examination by General Clarke, concerning his employment by William Sharon to work on the Mexican dam, said:

- "Do you know from Mr. Sharon whether the mills or either of them had been running that season by water power from the Carson River?
- A. When I went to the Morgan mill in 1867 in July, that was the first time I ever was at the mill. I received instructions to go and take charge of the mill, and in his remark he said I would find the mills running both by steam and water, and that there was a dam about five miles above the Morgan Mill that they had running partnership with the Mexican mill, and he said the dam is broke and there is no water running in the ditch; he said, 'I understand that dam is broke, and there is no water in it.'
- Q. Describe the two pieces of dam that you found in the river in July 1867 when you went there.
- A. The upper dam, which seemed to be the principal dam, was simply made of logs and brush and earth and rock. There did not appear to have been any systematic work done on it. It seemed to be made of a mass of timbers and rock and earth and brush; when I went up there they had a man named McDonald [McDonald] who was trying to get the breakage repaired. They were attempting to repair the dam with stone and brush. The water was running through the break in the dam and there was none being turned in the ditch at all.
- Q. Now, as to the lower dam.
- A. The lower dam seemed to be made of frame work, of boards and scantling, and there was about half of that dam on this side of the river, and on the other side it was gone entirely out, and there was no hindrance to the flow of the water in the river at all from the dam.
- Q. What kind of a dam did you put in the river in 1867?
- A. I put in what we called at home in the Eastern States, a lock and chain dam; that is, a dam put in with logs from one side to the other and all locked together. I went on the mountain and had forty foot logs cut and floated them down the river. I had them cut on what is known as the Kingsbury Grade. I went there and had the logs cut down and trimmed, full length, and averaging about 40 feet, and we put in what we called at home a lock and chain dam, and it has stood ever since; before that they didn't seem to be able to keep a dam in the river.

- Q. Do you remember about when you commenced to work on the river to make that dam?
- A. I think it was along about the middle of November, 1867, that I commenced to work on the dam. I had to get my timbers down on the Kingsbury Grade and float them down and trim them, and it was about the middle of November, 1867, that I got started on the dam.
- Q. How long were you at work there building the dam?
- A. Until the following August, 1868.
- Q. About how many men did you have at work?
- A. I had on the ditch and dam different numbers according to the way they were needed for the work. I would have from 30 to 200 men; sometimes I would have as high as 200 and sometimes as low as 30; sometimes I would have a large force on the dam and sometimes on the ditch according to the way I wanted them.
- Q. Was there any work done on the ditch also?
- A. Yes, there was work done on the ditch. I would not be positive, but I think I cleaned it out; I took out some four inches that had filled on the bottom; I think I did that in 1867; I know I did it in 1868; but I think I also took the bottom about four inches deep out of the ditch; that was from sand falling in; it was not enlarging the ditch at all; of course, it enlarges the ditch to take the sediment out. When I started to put the dam in, in order to take the water out of the dam to throw it into the ditch, it was found necessary to clean the ditch out, and I cleaned out the ditch from the dam to the Mexican mill. I am not positive now as to the time, but I could tell from a memorandum I have at home; but I think I cleaned the ditch in the fall of 1867, and I know I did it in 1868.
- Q. Both of those years?
- A. In the winter of 1867-1868, there was a flood, and the water has never been so high since, and it deposited a great deal of sediment in the bottom of the ditch, and I had it thrown out in 1868. The flood tore the ditch out some, too.
- Q. Did you raise the banks of the ditch any higher?
- A. Yes, of course, it makes the banks a little higher by throwing out the sediment, but there was no intention of raising the ditch any higher. The object was to get the sand from the bottom of the ditch, and not to raise the banks.
- Q. You say the high water carried away the upper end of the ditch?
- A. Yes, sir.
- Q. For what distance?
- A. Probably a quarter of a mile or more.
- Q. What did you do in the way of replacing it?
- A. We excavated in the bank.
- Q. Was there any portion of the flume carried away also?

A. There was not much flume there then, but what there was was all taken out by the flood.

Q. Did you put in any new flume in 1868?

A. I cannot remember now; it is so long ago.

Q. How much money was expended in building the dam and repairing the ditch in 1867 or 1868?

A. Somewheres about \$28,000—a little rising of it.

Q. What was the effect of building this new dam and the work that you did on the ditch as to increasing or diminishing the amount of water that would flow through the ditch?

A. It increased the volume of the water flowing through the ditch and made it regular. That was the object of putting the dam in there, so that the water could be relied upon to run the mill. The dam was put in permanent, and there was no more breaking.

Q. The effect of this work was to increase the amount of water that would flow through the Mexican ditch?

A. Yes, and make it permanent and reliable.

Q. It also had the effect of increasing the flow and capacity of the ditch?

A. Yes, sir.

Q. Could you give any estimate of how much more water would run through the ditch after you completed your work than run before the work was done?

A. I don't know that I could tell it either in inches or in cubic feet.

Q. About how much was the increase in proportion to its former flow?

A. There was quite an increase.

Q. Would you say it increased it at least one-half more than it formerly run?

A. No, sir; not that much.

Q. Would you say it increased it one-fourth or one-fifth?

A. That is all guess work. It increased it probably one-sixth or one-seventh. I am satisfied it never was increased as much as one-fourth.

Q. Do you know from your own observation or from what Mr. Sharon may have said to you when those dams went out?

Mr. Colfin: We object on the ground that it is hearsay.

A. All that Sharon said to me when he sent me to the Morgan mill, he told me that the mill was run both by water power and steam. He said how much water there is, I don't know; you had better go and look; I understand that there is a breakage in the dam.

Q. He didn't say when the dam went out?

A. No, sir. But he remarked either at that time or soon after that time that they had expended \$150,000 trying to dam the river, and their dams always went out.



- Q. With what success?
- A. With no success; he said the dams they put in kept going out, and he said that if I could go and dam the river to do it, and I did.
- Q. Do you remember the dimensions of the cut that you made at the head when you moved the ditch on higher ground where you built your lock and chain dam, further to the west?
- A. No, sir; I don't remember; that cut came out pretty near at the same point that it came out before. The freshet had taken the lower side of the ditch entirely off, and that is where we dug in.
- Q. Can you state how much higher the dam which you put in the river when complete than was the old dams that you found there?
- A. That is guess work, but I would think it was probably a foot or sixteen inches higher than the original old earth dam." (520, Defendants' vol. 2, pp. 720-725).

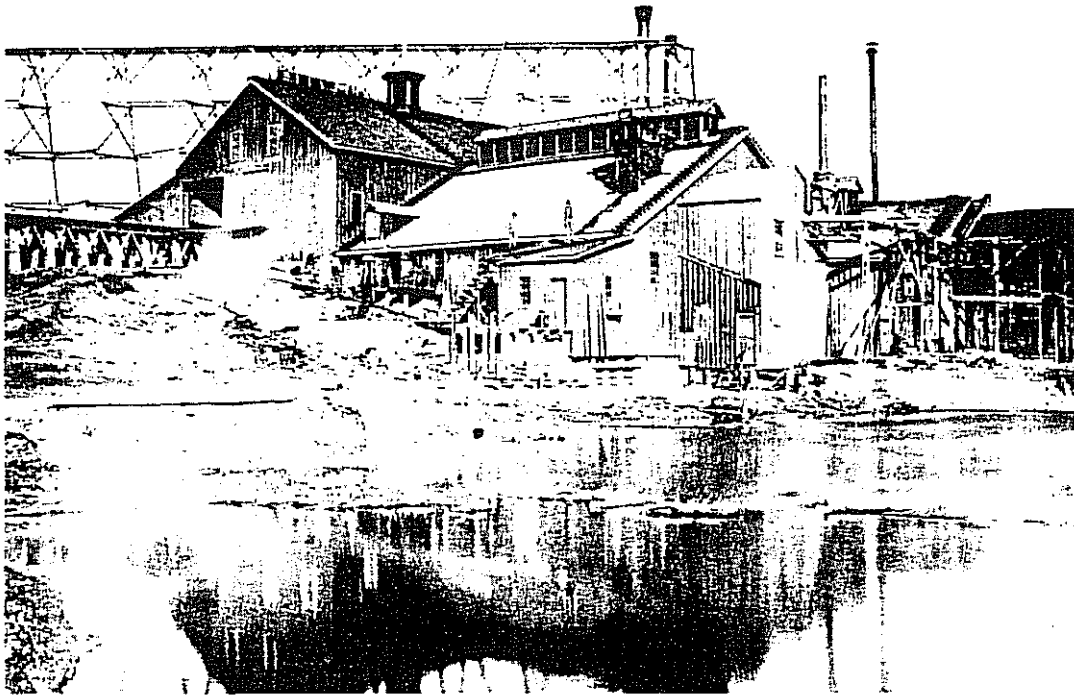
James Morris, under direct examination by Counsel Coffin in 1893, stated in answer to the following question:

- "Have the mills that you are acquainted with—the Mexican, Brunswick, Vivian, Merrimac and Santiago—been running practically continuously since you first knew them, except when hung up for repairs or for want of water in the river?
- A. The Mexican mill has not run for a long time.
- Q. For how long?
- A. A good while. I cannot say how long, but apparently permanently for a while there.
- Q. Would you measure the time by months or years?
- A. It was over a year. Everything was worked up around it and all their supplies were sold off.
- Q. Then a new mill was built there?
- A. Yes, a new mill was either built there or the old one very materially repaired." (520, Plaintiff's vol. 1, p. 184)

The condition of the mill in 1893 was described by civil engineer L.H. Taylor under direct examination by General Clarke:

"There is an old dam of earth thrown across a narrow place a little over three hundred feet in length and in the neighborhood of ten feet in height at the highest part. There is a break in it at present through which the water flows through the ravine and into the river, and some of the water is used for irrigation below. Besides measuring the length and height of this dam I also noted how far up the valley it backed the water. With the water a foot below the crest of the dam it could back the water very nearly nine hundred feet and cover twelve or thirteen acres of ground.

- Q. Did you find any evidence that a flume had ever been carried from that dam to the Mexican mill ditch?
- A. I did: from near the north end of that dam there has been a flume running in an easterly direction to the Mexican mill ditch. There is along the line of this flume fragments of timber, and in places it showed the marks of where the mud sills were, and just before reaching the Mexican mill ditch there is some massive rock that has been broken down along the line of the flume in order to allow its passage." (520, Plaintiff's vol. 3, pp. 103 and 106)



BANCROFT LIBRARY

The Morgan mill, two views 1876.

12 YEARS OLD

75 Tons per Day

### Morgan Mill

The Morgan mill\* was the next mill down the river from the Mexican. Inasmuch as it was a steam mill when the suit of the Union Mill and Mining Company was brought against the ranchers of Carson Valley, it was not named in the complaint and only incidentally in testimony concerning the other mills.

James Morris, testifying concerning the Mexican and other mills along the river described how the Morgan was situated with reference to the other mills. He gave the date of building the mill as 1864 or 1865. Under direct examination by Counsel Coffin, he stated:

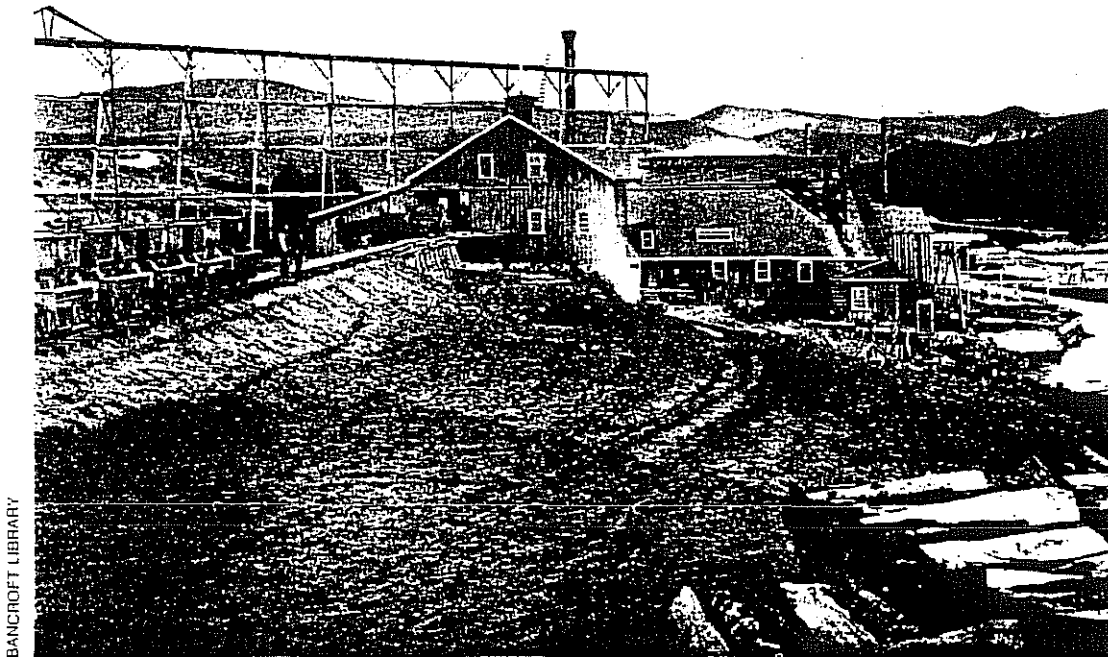
“Do you know anything of the fact of the cutting down of the Mexican tail-race and thus increasing the fall of the water at the wheel?

A. Yes. I have known of it since it occurred. I have learned of it since it occurred.

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\*This mill was occasionally referred to as the Yellow Jacket Mill. This was due to the fact that it reduced ores of the mine of the same name. On 3 August 1871 the DAILY STATE REGISTER reported that “the last of the Yellow Jacket hullion was cleaned up from the Morgan mill and shipped to the Branch Mint in this city (Carson).”

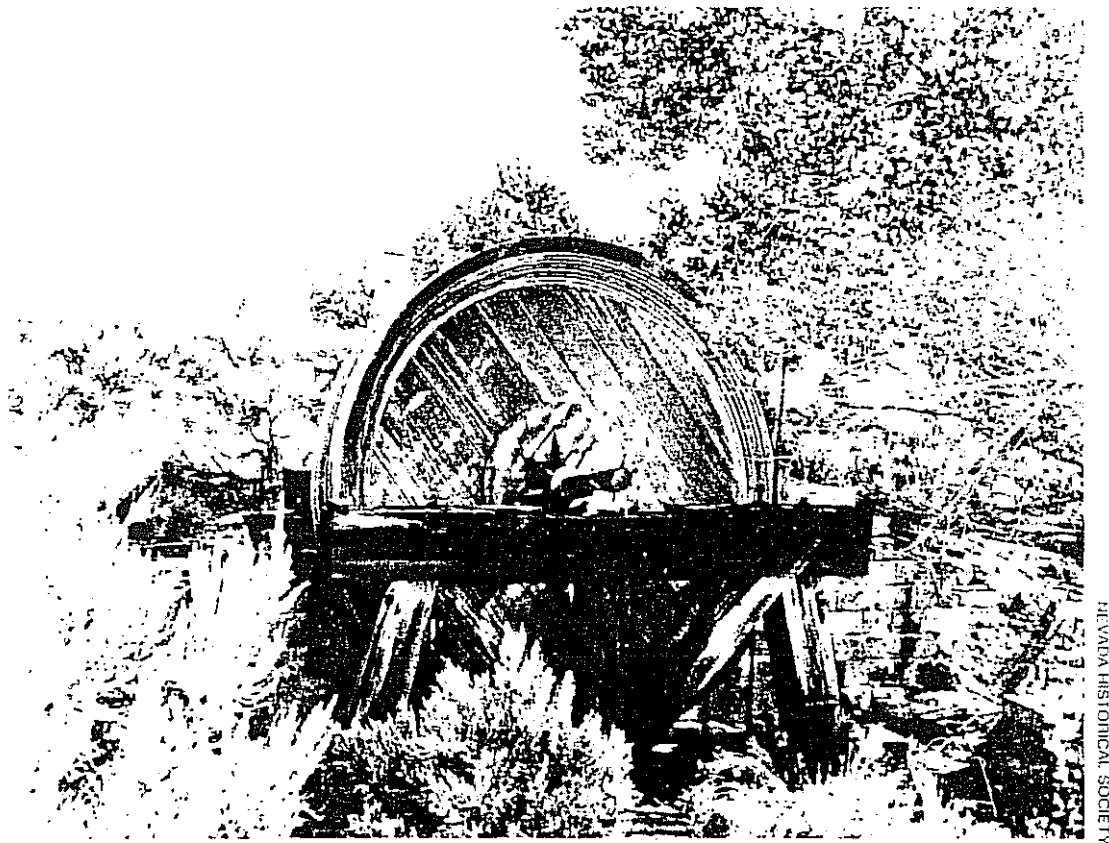
- Q. When did it occur?
- A. I cannot give any dates. I suppose it was five or six years after the water was turned to the Morgan mill, and the Morgan mill was built in 1864 or 1865, and this was five or six years afterwards.
- Q. Five or six years after the mill was built, you think the Morgan flume was abandoned?
- A. Yes, sir; it was principally water at the upper end and it didn't have to be deepened.
- Q. At the upper end of the Morgan flume you say the Mexican tail-race did not have to be deepened much?
- A. Only two or three feet. They only had to take out the Morgan flume and raise the bulkhead and let the water run through in the river. I have seen them do the work, but don't know how much it was cut. Originally, there was a mill stood there.
- Q. Originally, there was a mill stood where?
- A. At the upper end of the Morgan flume.
- Q. What was that mill called?
- A. The Meade mill. It was a mill that was spoken of as having twelve feet of fall; but I don't personally know what fall it had on the wheel that run it.



- Q. Just below the Mexican mill at a point on the Mexican tail-race between the mill and the river, there was once a mill called the Meade mill?
- A. Yes, sir.
- Q. Was it put up by Meade and Patterson, who located the Mexican water right?
- A. I don't know the name of Patterson. Atkinson, I think, was one of the parties. Atchinson, I think it was.
- Q. That was below the Mexican mill, and the community there understood that it had twelve feet fall of water on the wheel that ran it?
- A. Yes, when spoken of, they said the Meade mill had twelve feet fall. They had a hurdy-gurdy wheel.
- Q. Was the Meade mill taken away before the water was taken to the Morgan mill from the Mexican tail-race?
- A. Yes, and the same water right was put in this flume that led to the Morgan mill, with the same amount of fall.
- Q. When the Morgan flume was abandoned, the Mexican mill got whatever fall the Meade mill originally had in addition to its own?
- A. That is my understanding of it." (520, Defendants' vol. 1, pp. 321-322)

H.R. Logan who was superintendent of the Morgan mill from 1867 to about 1872, in his testimony, verified essential points made by Morris. Mr. Logan testified as follows under direction examination by Mr. Coffin:

- "What is your name, age, residence and occupation?
- A. Sixty-one years old; I have been in charge of different mills along the Carson River for the past twenty years, or something like that. I have been in charge of mills on the river with the exception of one year since 1876.
- Q. You have been superintendent of one or the other of the mills during that time?
- A. Yes, sir.
- Q. Of what mill were you first superintendent?
- A. The Mexican mill, for a short time.
- Q. In what year?
- A. I think it was in 1876.
- Q. How long were you superintendent of the Mexican mill?
- A. A couple of months, I think.
- Q. Did you have occasion to know the capacity of the mill and of the ditch as superintendent of the Mexican mill in 1876?
- A. I would like to state, however, that my first acquaintance on the river was in 1867. I was then at the Morgan mill.
- Q. That is a steam mill?
- A. It was run by steam and water at that time.
- Q. It is run by steam entirely now?



NEVADA HISTORICAL SOCIETY

The Morgan mill bull wheel about 1956. The wheel was damaged by vandals later.

- A. Yes, sir.
- Q. How long were you superintendent of the Morgan mill in 1867?
- A. I was superintendent of that mill between five and six years.
- Q. Did you at that early time have occasion to know and did you become acquainted in a general way with the other mills on the Carson River?
- A. Yes, with most of them as far down as the Eureka, but I know nothing about them below that.
- Q. You were superintendent of the Mexican mill in 1875?
- A. Yes, or in 1876, as I have forgotten the year now.
- Q. When did you first know the Mexican mill and ditch?
- A. In 1867.
- Q. And afterwards you became superintendent of the same mill?
- A. Yes, sir. My position there was a temporary arrangement for something like two months.
- Q. Was the Mexican ditch the same in size and capacity when you first knew it that it is now?

- A. I think it was, and to the best of my recollection, it was the same size then as now.
- Q. Has the mill been running continuously since then, practically speaking, with the exception of stoppages on account of repairs, or on account of scarcity of water to run with, down to the present time?
- A. In 1867 and following that time the mill was shut down for a year or two. At first the mill was a dry crusher, and when rich ores gave out on the Comstock there was no occasion for that style of mills, and the mill lay in that state for a year or two, and afterwards it was changed into a wet crusher.
- Q. With that exception has it run practically continuously since you have known it?
- A. Yes, of course, there has been times when there was no water in the river. Other times they have been without ore to work.” (520, Plaintiff’s vol. 1, pp. 201-202)

Milton R. Elstner indicated under direct examination by General Clarke that in 1867 the mill was owned by William Sharon, hence, the Union Mill and Mining Company of which Sharon was president. To this testimony he added some interesting details concerning the flood of 1867-1868:

- “Do you remember the fall the water had on the Morgan mill wheel?
- A. The fall from the Mexican to the Morgan, as near as I can remember was about eight feet.
- Q. That is all, the head you had upon your wheel?
- A. That is all.
- Q. Did you use water in part at the Morgan mill, wherever there was water coming to you that was available for power?
- A. Yes, sir.
- Q. Did you during all the years you were on the Carson River as superintendent of the mills observe the stages of water in the river, when at high and at medium stage, and when there was low water?
- A. Yes, sir.
- Q. What would you say was the high water stage at the mills on the river?
- A. In 1867, when I first went there, the high water stage was during the winter of 1867-1868.
- Q. That was during heavy rains and flood?
- A. Yes, and took everything out and the water came to the streets at Empire; then we had what we called the June rise, when the water went out of the banks of the river, but I don’t think they have any more June rise. Now, after the spring, the water recedes and goes down; but formerly, after the water went down there would be a rise in June which they called the June rise, and that kept the water up for some time.” (520, Defendants’ vol. 2, p. 729)

## Brunswick Mill

The Brunswick mill was situated on the Carson river about one mile below the Morgan. The first recorded document relating to this mill is a Petition of E. Gonin & J. Tullock to the County Court of Carson County, Utah Territory, dated 9 September 1860. (520, vol. 13, pp. 47-49) That the petition was granted is indicated by the following exchange between Counsel Coffin and Francis Tagliabue in San Francisco on 14 July 1893 before Special Examiner T.J. Edwards.

"I noted in the abstracts of title of the Union Mill and Mining Company's property, a survey made by F. Tagliabue, of the Brunswick mill property—did you make a survey of that mill and its property?"

A. Yes, as deputy for General Marlette.

Q. In the years 1860-61-62, were you a deputy United States surveyor under General Marlette?

A. In 1861 I was, and had charge in Carson as his deputy.

Q. You made a survey of the Brunswick mill site in 1861?

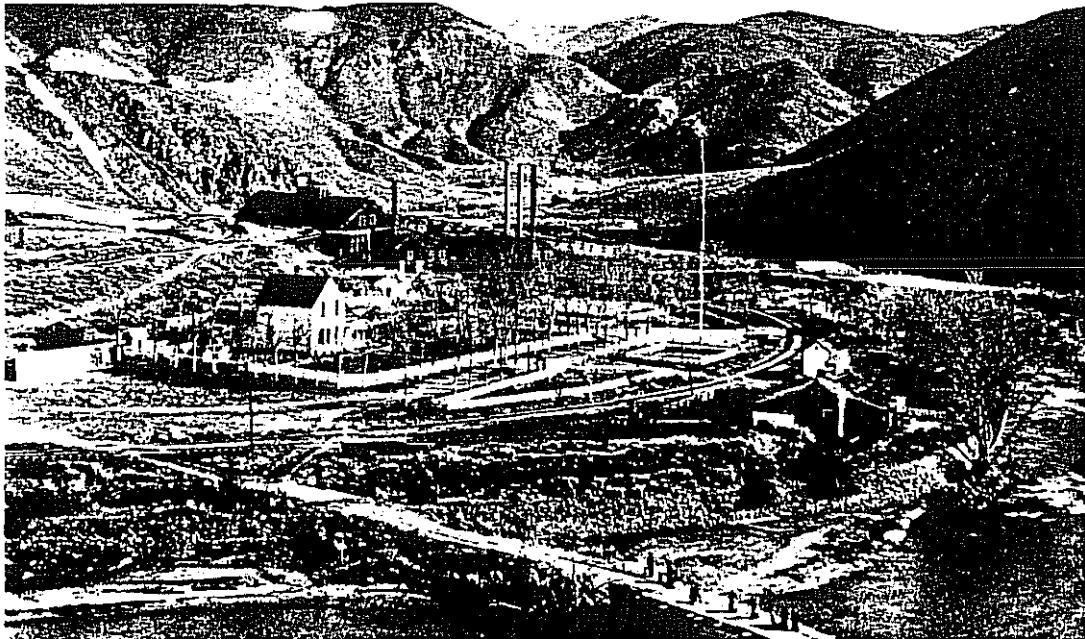
A. It is marked as surveyed for Leonard Walter, and made for the Brunswick mill.

Q. You have done considerable work of that kind of surveying on the Carson River?

A. Yes, sir.

Q. How extensively did you survey on the Carson River?

A. It is so long ago now, that I can remember only certain ones.



AUSTIN COLLECTION

On 19 May 1872 the DAILY STATE REGISTER reported that the Brunswick mill, "started up yesterday with the new wheel in full play," concluding, that it, "is a noble structure: is beautifully located, and all the houses belonging thereto are as nice [as] can be."

8 YEARS OLD





BANCROFT LIBRARY



BANCROFT LIBRARY

The Brunswick mill, reservoirs and sluices. 1876.

- Q. Did you do a considerable amount of surveying on the Carson River from Dayton to the California state line?
- A. Not a great deal. I remember being at Genoa once surveying; I remember that because Sam Brown was killed at that time. I was surveying for Dick Allen, a Justice of the Peace, and he asked me to help him take the testimony in the case of Van Sickle, who killed Sam Brown.\*" (520, Plaintiff's vol. 2, p. 624)

The mill was deeded to William Sharon on 14 December 1866. Sharon deeded it to the Union Mill and Mining Company on 7 May 1868. According to the *DAILY STATE REGISTER* for 3 August 1871, the mill was bought by the Crown Point Silver Mining Company of Gold Hill at that time. The *REGISTER* remarked parenthetically that the Crown Point is Alvinza Hayward and J.P. Jones, "so to speak." There were no records of this transaction in the chain of title submitted to the court in 1893. There is, however, an account of work done at the Brunswick which may be assumed to have been undertaken in the course of a reorganization. In 1875 William Sharon deeded to John P. Jones and later in that year the Union Mill and Mining Company, and J.P. Jones deeded to Pacific Mill Company which was owned by Sharon. (Angel, 594) The consideration named in this transaction was a quarter of a million dollars.

The ditch to the mill was completed in 1863 and the mill itself in 1864.

Milton R. Elstner, under direct examination by General Clarke, gave the following testimony in 1893:

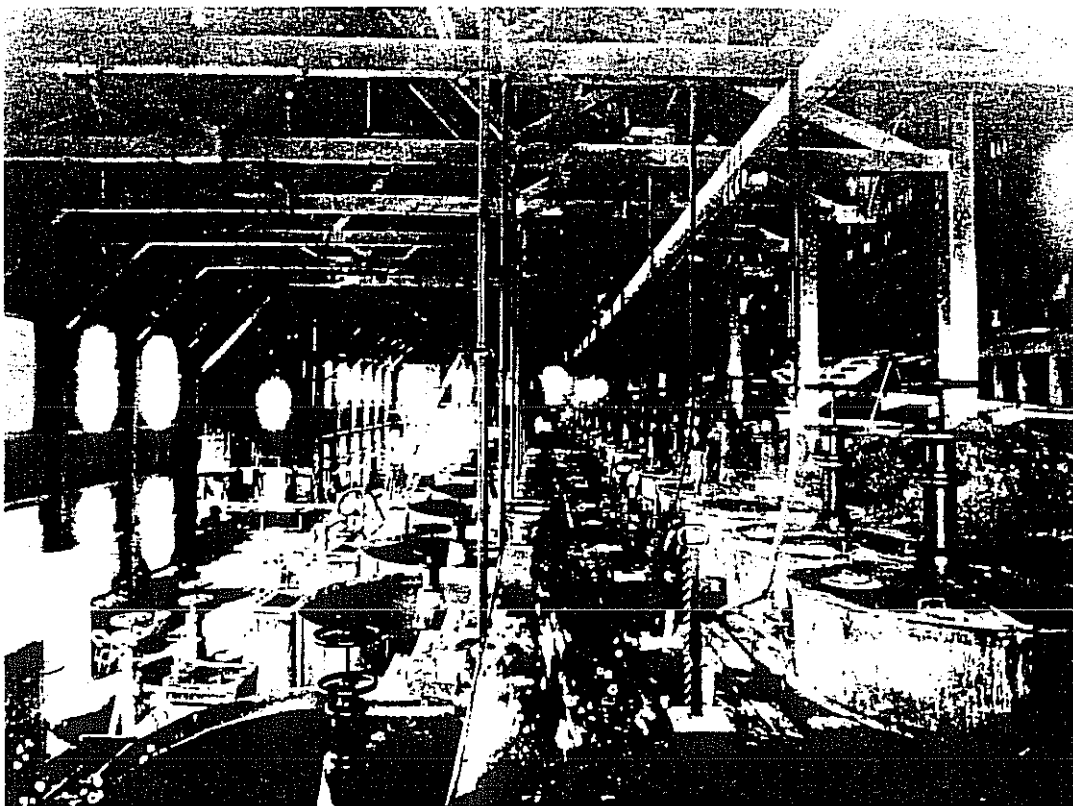
- "Were you ever at the Brunswick mill in charge there as superintendent?
- A. Yes, sir.
- Q. When?
- A. I went there in June, 1870, and left in 1875.
- Q. Was there anything done by you or under your supervision to increase the water power at the Brunswick mill?
- A. Yes, sir.
- Q. What work?
- A. We put in a new dam there and added two 52-inch Lefell wheels.
- Q. Was there anything done to increase the quantity of water flowing in the ditch—you say you put in a new dam?
- A. Yes, sir.
- Q. Did you do anything to the ditch?
- A. Yes, sir.
- Q. What did you do?
- A. We widened the ditch; I don't think we deepened it any, but we made it much wider.

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\*On this episode, see the writer's "Carson Valley," pp. 140-141.

- Q. What sort of a dam did you find at the Brunswick when you went there in June 1870?
- A. It was one of those old casually put in dams; it didn't seem to be put in by any planning. However, there was some timber and rock in that dam, and it was a better dam than the old Mexican dams.
- Q. Did it turn water into the ditch?
- A. Yes, sir.
- Q. Was there a new dam made higher at the Brunswick?
- A. Yes, sir.
- Q. About how much higher was it made?
- A. About 18 inches higher, and possibly two feet. I think it was made about 18 inches higher.
- Q. How much wider was the ditch made?
- A. I cannot state the number of feet, but it was made almost double its former size. I state that because it required at least double the quantity of water to run the improved mill. If I remember right, the two 52-inch wheels took about 11,000 cubic feet per minute.

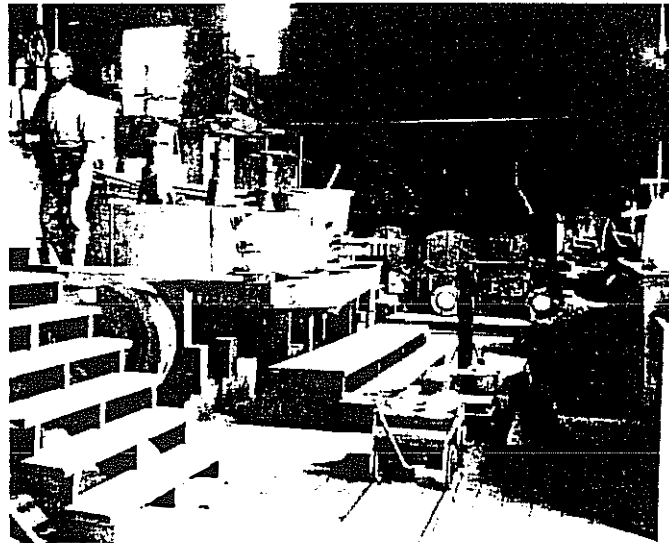
The Brunswick mill stamps, 1876.





CALIFORNIA STATE LIBRARY

The buildings at the Brunswick mill, 1876.



Cleaning up and weighing bullion at the Brunswick mill, 1876.

CALIFORNIA STATE LIBRARY

- Q. How much was the flow of water increased after the dam was raised and the ditch enlarged?
- A. It was increased, I should judge, very near one-half—probably not fully one-half.
- Q. What do you mean by your answer?
- A. When I went there I think the ditch was larger than was necessary to run the 48-inch Lefell wheel, and I think it would carry probably enough water to run a 52-inch wheel, but instead of putting in one 52-inch wheel, we put in two of them, and the ditch was made to carry twice as much water as it formerly carried when they were running one 48-inch Lefell wheel.
- Q. You say the mill was a 16-stamp mill when you went there in June 1870 and it was enlarged to a 56-stamp mill, and the ditch was enlarged so as to run such a mill?
- A. Yes, sir.
- Q. How long were you at the Brunswick mill as its superintendent?
- A. Five years.
- Q. In what years?
- A. From 1870 to 1875.
- Q. Were you superintendent all that time?
- A. Yes, sir.
- Q. If I understand you, you went on the river under Mr. Sharon's instructions and were there July 15, 1867?
- A. Yes, sir.
- Q. You were then at the Morgan mill?
- A. Yes, sir.
- Q. In what capacity were you at the Morgan?
- A. Superintendent.
- Q. How long were you there?
- A. To the 5th of June, 1870, when I went to the Brunswick in a like capacity.
- Q. So, you have been on the river from July 1867 to 1875 as superintendent of mills?
- A. Yes, I think it was the 25th of January, 1875, when I left the Brunswick.
- Q. State about what time—what months of the year—there would be a sufficient supply of water at the Brunswick to operate the mill—begin with the first year that you went there?
- A. When I first went there, there was enough water to run the 16 stamps, and they had no June rise, and the water commenced falling along about the latter part of June, and it continued to fall until at the Brunswick you could walk across the river dry shod below the dam. According to my recollection, the water then began to increase a little in October and November.
- Q. Take the month of July, generally, at the Brunswick, during the time you were there, and state what was the stage of the water—was there or not enough water generally to operate the mill in July?

- A. There never was enough water at any month during the three years I was running the new Brunswick mill, but one month during the three years I was there. I will say that mill never run one month full force during the three years I was running it, either from lack of water or from lack of ore; but there was never enough water to run that mill full except during a freshet, when the river would be full.
- Q. What portion of the machinery could you operate, generally, in the month of July?
- A. The mills began to weaken along in July. When the water commenced to decrease it decreased rapidly. We might have run in some months of July forty stamps, but I don't think in the summer months that we could run the forty stamps and run the pulp in the pans.
- Q. Would there be less water in August than in July?
- A. Yes, sir.
- Q. Was there any time when you were there when there was no water in the river which could be made available to run your stamps?
- A. I don't remember when there was no water at all. The wood drives would need a good deal of water, and I have on one or two occasions given them the use of the water for four or five hours to help them along until they got out of the way.
- Q. During the years that you were at the Brunswick, did you run the mill every month during the summer months?
- A. Yes, sir.
- Q. How many stamps did you run when you were there?
- A. We have run down sometimes as low as ten or fifteen stamps, and the pan capacity was also run down. I don't know that we ever run down so low as ten stamps and pans. I think it was 15 stamps and pans for 15 stamps.
- Q. Beginning with what year—when did you go there to run the mill?
- A. I went there in 1870, and the new Brunswick mill was finished in 1872.
- Q. Did you have enough water in 1870 and in 1871 to run the old 16-stamp mill?
- A. Yes, there was always enough water to run the old 16-stamp mill.
- Q. You have not been there since 1875?
- A. No, sir." (520, Defendants' vol. 2, pp. 725-728, 730-732)

H.R. Logan, who had been a superintendent at several mills from 1876 on, was, in 1893, superintendent of the Brunswick where he had been in charge for four years. Under direct examination by Counsel Coffin, he made the following statements concerning the shortage of water at the mills:

- "The shortage begins in July and by August you are practically shut down?
- A. Yes, the fourth of July is generally fixed as the last day for the mills to have a full head, and after that they begin to hang up stamps until they shut down entirely. It was generally a good bet that we would not have a full head on the 5th of July of each year.

Q. How was it in former years—say eight or fifteen years ago compared with the present time or more recent years as to the quantity of water in the river in the summer season?

A. There was times then that we were short of water in the summer season.

Q. Was the shortage as great as recently?

A. No, sir.

Q. When you were first on the river you had water plenty to run throughout the season?

A. Pretty much, yes. We did not have a full head, but we had something to run with. We could run some portion of the mills.” (520, Plaintiff’s vol. 1, p. 209)

Dean B. Lyman, who had been a superintendent at the Mexican mill (1870-1875), observed the effect of the improvements at the Brunswick, in testimony in 1893, under direct examination by Counsel Coffin.

“Do you know whether the main increase at the Brunswick when they made the change that you speak of was in the stamps or in the pans?

A. My recollection is that the mill was enlarged, and in fact almost rebuilt, and when this change took place they made a larger mill, capable of crushing more tons of ore, and whether there was the same amount of water required to run it or not, I am not able to state, as they made improvements at their mill to get more fall, and getting more fall they might not require more water to run the mill, as they might get as much more power in that way as they might need. They cut away behind the wheel and lowered it and got more fall in that way. They cut down and obtained fall where the water discharges in the river, cutting from the river back to the wheel, and gained several feet of fall. That being the case, the water would develop more power, having more fall on the wheel.” (520, Plaintiff’s vol. 1, pp. 240-241)

L.H. Taylor made a survey of the ditch in 1893. In his written report, he stated that “the Brunswick mill ditch takes water from the left bank of the Carson River at a point about one mile below the town of Empire. The water is diverted into the ditch by means of a rock and timber dam, 95 feet in width on its crest between abutments.

“On September 23d, 1893, I made an examination of the dam and ditch. I found all the water of the river, with the exception of 10 or 15 inches of leakage, being diverted into the ditch.

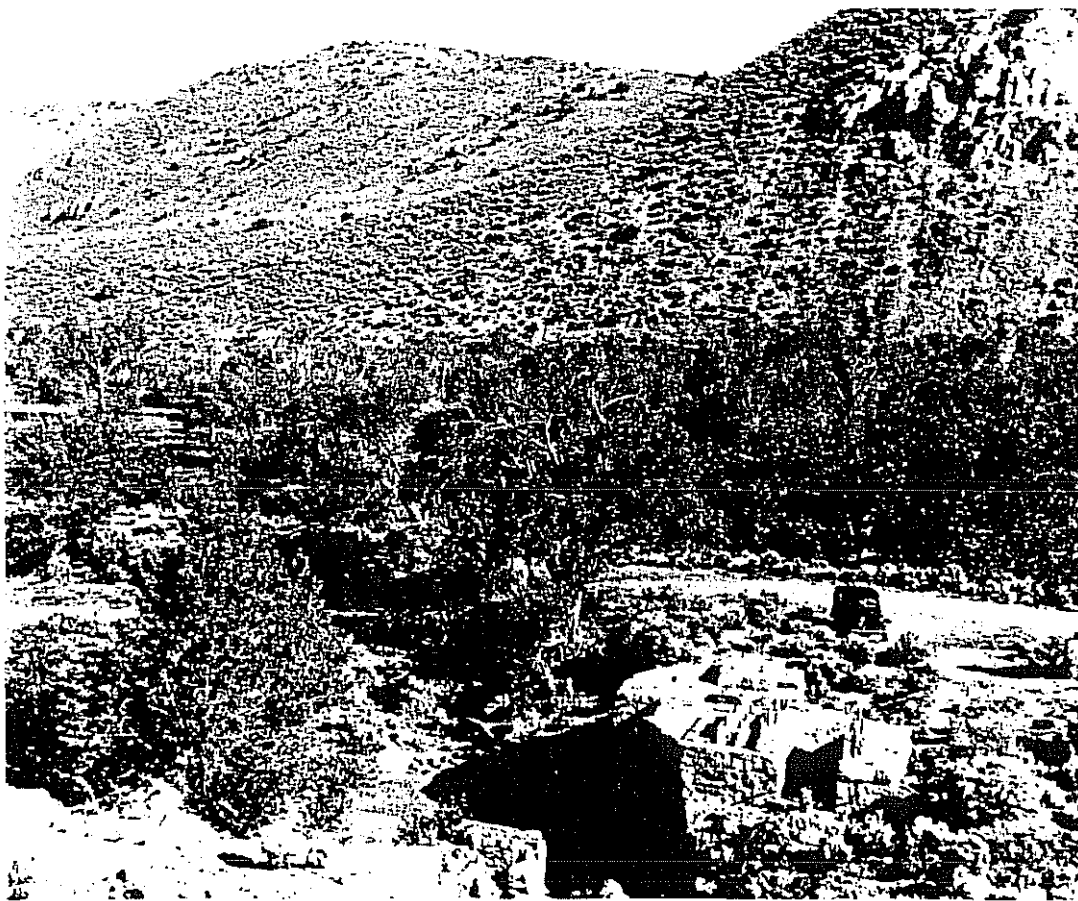
I measured the ditch at a point a short distance below the headgate, taking a section 546 feet in length, which I found to have a total grade, taking the present water surface of 0.091 of a foot, and a mean sectional area of 78.77 square feet. The mean radius was 3.2416.

Throughout this section of the ditch the right or lower bank is formed of a retaining wall of stone, and the sectional dimensions are comparatively uniform, and the ditch is in fair, but not first-rate, order. So, in calculating

the discharge, by Kutter's formula. I used the coefficient for roughness 0.025, which is liberal, and I find the discharge to be 133.12 cubic feet per second of time, or 6656 miner's inches, measured under a 4-inch pressure.

I also ascertained the maximum surface velocity of the water by means of floats, finding it to be 2.256 feet per second, which multiplied by the coefficient 0.74, deduced by Bazin, gives a mean velocity of the whole stream of 1.67 feet per second, and a discharge of 131.54 cubic feet per second, or 6577 inches.

I also computed the carrying capacity of the ditch when running full to the high water mark, which was quite distinct on the ditch's banks above the water surface at that time—September 22—the mean sectional area I found to be 88.76 square feet; the total grade of high water mark in 546 feet, 0.127 of a foot, and the discharging or carrying capacity, 168.64 cubic feet per second, or 8432 miner's inches. In this calculation I used a co-efficient for roughness of 0.0275, made necessary by the weed and brush above the present water surface and below the high water line.” (520, Plaintiff's vol. 3, pp. 183-185)



The Brunswick mill ruins.



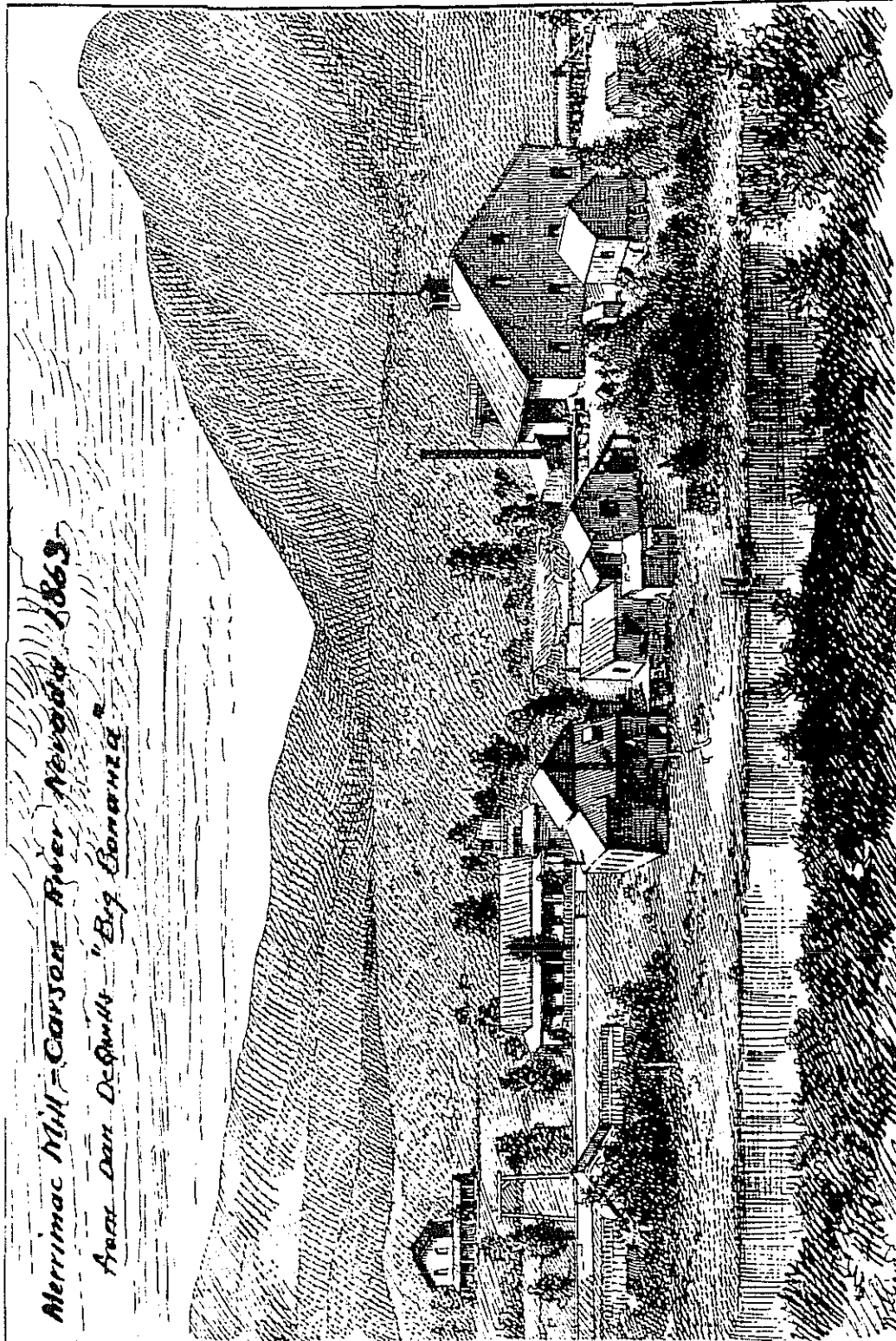
### Merrimac (Merimac) Mill

The Merrimac mill was situated, according to Kelly's second directory (p. 91), on the west bank of the Carson River, two miles below Empire City. The first recorded document relating to this mill is a Certificate of Survey to B.F. Wheeler, dated 13 May 1861. It was sold by S.R. Ellsworth to H.M. Yerington on 17 December 1863 for \$40,000. (520, vol. 13, p. 126)

H.M. Yerington sold to the Union Mill and Mining Company on 24 November 1868 for the same amount of money which he had paid for it. (520, vol. 13, p. 135)

Blacksmith and wagon maker A.M. Ellsworth, brother of S.R. Ellsworth, testifying in 1872, said:

"I found Wheeler and others camped on the bank of the river on or about the 26th of May, 1861. Two Burkes, McCauley and the old man Wheeler, they were working on this ditch at that time. We purchased from B.F. Wheeler, George Burke, Michael McCauley and William Burke, The Merrimac Mill property and water rights either on the 4th or 6th day of June 1861. We made the contract at that time for the property, to pay them \$4000, and took possession of the property. We made a further contract with the two Burkes, McCauley and another party (whose name I have forgotten) to continue the ditch. This was about the same time, within two or three days. It was after this that I made the survey, to which I have referred, and according to which they afterwards worked. They had, before that, driven their grade stakes. They had worked prior to that work, according to their grade stakes. The quantity of work that they had done according to their survey prior to my going there on or about the 26th of May, 1861, we thought at that time, according to Washoe prices, was worth \$400 or \$500. They had begun according to the line some engineer had given them, and had dug partially down to the grade of the race on the bottom. They had dug nearly to the depth and to the full size of the ditch. The ditch and race were completed about the 12th of September, 1861. We turned the water on about that time. I was engaged about this time from the 12th of June until the 12th of September, 1861, carrying on the work, superintending the constructing of the ditch, building the dam and the mill—the Merrimac Mill. We commenced building the dam about the 10th or 12th of June, 1861, and commenced the mill about the same time. The ditch was 14 feet wide on top at the grade pin, 10 feet on the bottom and 3 feet deep below the grade pins. We threw the dirt in running the ditch from the upper to the lower side, so as to increase the carrying capacity of the ditch: the ditch would carry from 4 to 4½ feet in depth: but we did not use it to that capacity, as a general thing. We usually carried from 6 to 12 inches above the grade pins: that is, from 3 feet and a half to 4 feet of water in the ditch. The capacity of the ditch was never changed while I was there. I left there, and sold out that property about the 20th of December, 1863. That quantity, from 3½ feet to 4 feet of water was, in my judgment, necessary to drive that mill, or we would not have built it of that capacity.



*Merrimac Mill - Carson River Nevada 1863  
Arch. Dan DeQuilly "Big Bonanza"*

The Merrimac mill, 1863. (N)

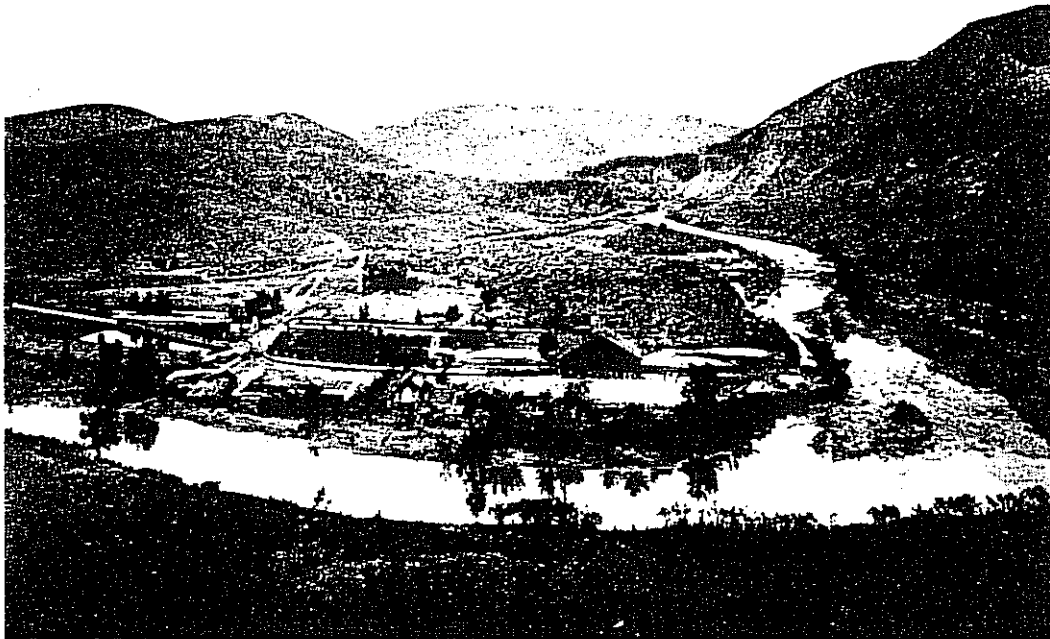
The dam was changed in its locality by a flood in the winter of 1861 and 1862, which carried away the dam, and a dam was afterwards rebuilt higher up the river, about 29 or 39 rods higher up the river. It was built higher up the river, because it was self-evident, it could not be rebuilt at the same place, without very great expense, from the fact that the banks were washed away. The dam that was constructed higher up the river did not divert any more water from the river than was requisite for the old dam. It was not built for that purpose. It was built solely for the purpose of running the water from the Carson River in the same ditch, and for the purpose of driving the machinery of the Merrimac Mill. We extended—we lengthened the ditch for the purpose of carrying the water from the new dam to the mill. We did not turn in any more water than we required to run the mill or that had theretofore run in the ditch: there was no change made in the size of the ditch.

We commenced the construction of the new dam immediately after the subsidence of the water, and completed the same as soon as possible: we worked all the force we could conveniently.

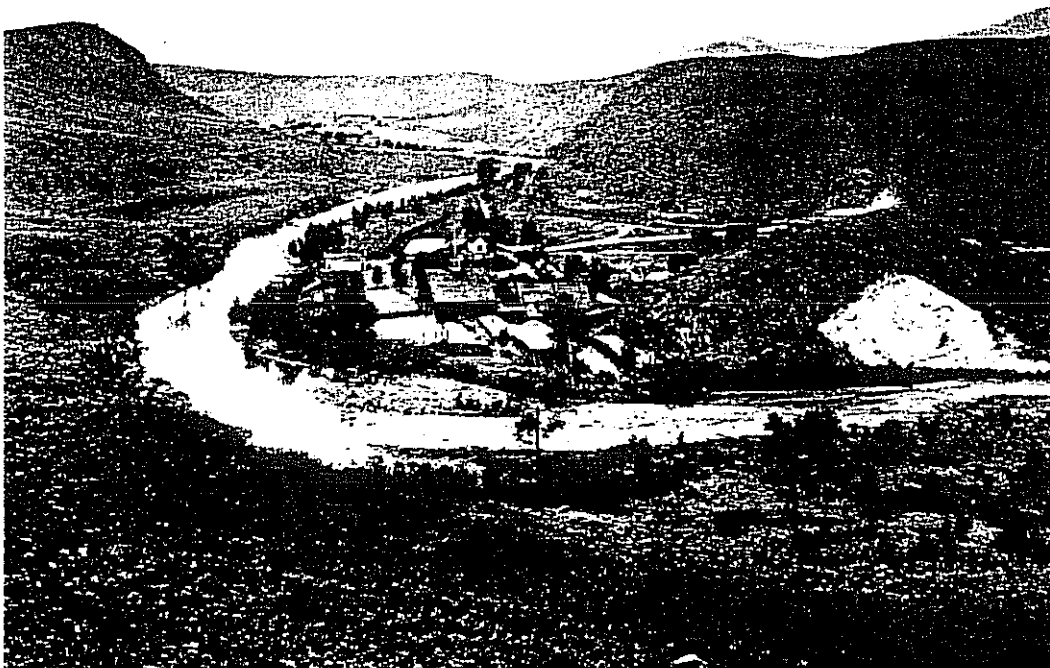
My brother, S.R. Ellsworth, had more the management of the mill than I did. I attended more to the outside matters. We had an arrangement with the Lucerne Mine for the use of eight of the stamps. We had no pans in the Merrimac Mill when we first started. We used in 1861 to save the silver, Hungarian bowls and blankets and sluices. I don't remember the number of bowls we used; they were in there but a short time. If my memory strikes me right, we only used these bowls three or four weeks, when we put in some iron bottom pans with wooden sides. We added some new pans after the new dam was built after the flood.



The office at the Merrimac mill.  
1876.



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The Merrimac mill, two views, 1876. 15 YEARS OLD

We used only a part of these tubs or pans prior to the flood.

The head of water at the wheel was 19 feet and some inches. The wheel was an Arnold, center discharge, seven feet in diameter, two feet face or bucket. The dimension of the gate, which was a wing gate, was 2 feet by 16 or 18 inches with a 18 feet, some inches head. The stamp stems were 3½ inches in diameter, 14 feet long; the large ones would go a little over 900 pounds, and the small ones over 800 pounds; in each case, with a new shoe, which would weigh about 120 pounds.

The length of the original ditch, from the dam to the mill was about 109 rods, as near as I can recollect; on the bed on the new dam, it was 29 or 39 rods longer; I don't remember the grade of the new part of the ditch—from 29 or 39 rods—the first ditch was ⅓ of an inch to the rod from the old dam to the mill.

The mill was overhauled and repaired in 1863. There was no work done and no repairs on the dam in 1863, so far as I recollect.

We built a road along the ditch in 1863. I don't recollect any other work done on the ditch at that time. We kept a man at the ditch, looking out for it all the time." (520, Plaintiff's Exhibit 52, pp. 4-10)

On cross-examination by General Clarke, Ellsworth stated:

"There was a flume to bring the water from the ditch into the bulkhead at the mill; the length I do not know—I should think it would not exceed 100 feet; I think it was more than 30 feet. I don't know how wide it was. I did not build it. It was built by the millwright to suit his own notions." (520, Plaintiff's Exhibit 52, pp. 9-10)

William D. Torreyson, in an affidavit made in 1872 in one of the cases filed by the Union Mill and Mining Company against the ranchers of Carson Valley, (see above, p. 10 ff.) said that he was first connected with the Merrimac in 1863.

"I leased, in connection with H.F. Rice, a one-half interest in the mill, with the privilege of purchasing within one year, at a stated price. At the time of the lease, the mill was a quartz mill, a water power mill.

It had sixteen stamps. I think there were no pans in the mill. They then used tubs with iron bottoms; there were no pans in use at that time. The other half of the mill was used by the Lucerne Mining Company for working gold ores; they used small settlers, about two feet in diameter; there was a center-discharge wheel in use at that time, a wooden wheel with a cast iron eye.

I have seen the gate through which the water was discharged from the flume on that wheel. The gate, when I went there, was an iron gate. The dimensions of the gate were twelve inches by fifteen inches. The head of water at the gate was sixteen feet and a half if I remember correctly.

There were repairs made on the mill in 1863. After Rice and Torreyson leased it to the Ellsworths, we threw out all of the machinery in the mill except the battery. We put in twelve Wheeler pans at that time, and afterwards increased it to fifteen. At that time, we put in two settlers.

We found that the wheel would not move the new machinery, and we therefore increased the size of the scrowl and the buckets to give it more water. The size of the gate, through which the water was discharged upon the wheel thus improved, was eighteen inches by twenty-four inches—the wooden gate.

In 1863, Rice, Ellsworths and myself having increased the size of the gate, more water was required to keep up the head of water. And we took off the points or angles in the ditch. We took the large boulders out of the bottom of the ditch, and built up the embankment on the lower side in places of the ditch, and tightened the dam. After we had done this work, we had not power sufficient to drive the machinery. We then concluded that the wheel was an improper one, and we employed a man named Riley, who was the principal mechanic of the Mexican Mill, to construct a new one of a different kind, which he did. I call this new wheel the Tub Wheel. He aimed to make what is termed Juggers Turbine wheel, but he came far from doing so. We turned the water onto this wheel and took portions of it out of the ditch. This wheel was intended as a substitute for the Center-discharge wheel, and was put in the same place. The Riley wheel was put in some time in the summer of 1863.

Mr. Yerington was then superintendent of the mill. I worked a few days to make it succeed, but failed. We then contracted for the Jean Valle Turbine Wheel, and this wheel was put in in the Fall of 1863. The Wheel was made at the Vulcan Foundry, and was put in by a man who is now foreman of that foundry; his name is Arnot.

Before we put in this wheel, we sent for Mr. Torkay, a mechanic and engineer, the principal mechanic of the Vulcan Foundry. After we put in the Turbine wheel, or about that time, the breast of the dam was raised about two feet, I think. I don't know whether it was before or after the turbine wheel was put in that the dam was raised." (520, Plaintiff's Exhibit 52, p. 113-115)

A.M. Eddington stated that in 1871 when he was superintendent of the Union Mill and Mining Company's property in the state of Nevada, there was not enough water to run the Merrimac from July 1 through August 28. He estimated the damages to the mill for this period at \$7500. (520, Plaintiff's Exhibit 52, pp. 50-51)

Sam Longabaugh, a wood driver, testifying in 1893, stated that the Merrimac mill had been torn down and an arrastra put in its place ten or twelve years earlier. (520, vol. 2, p. 356)

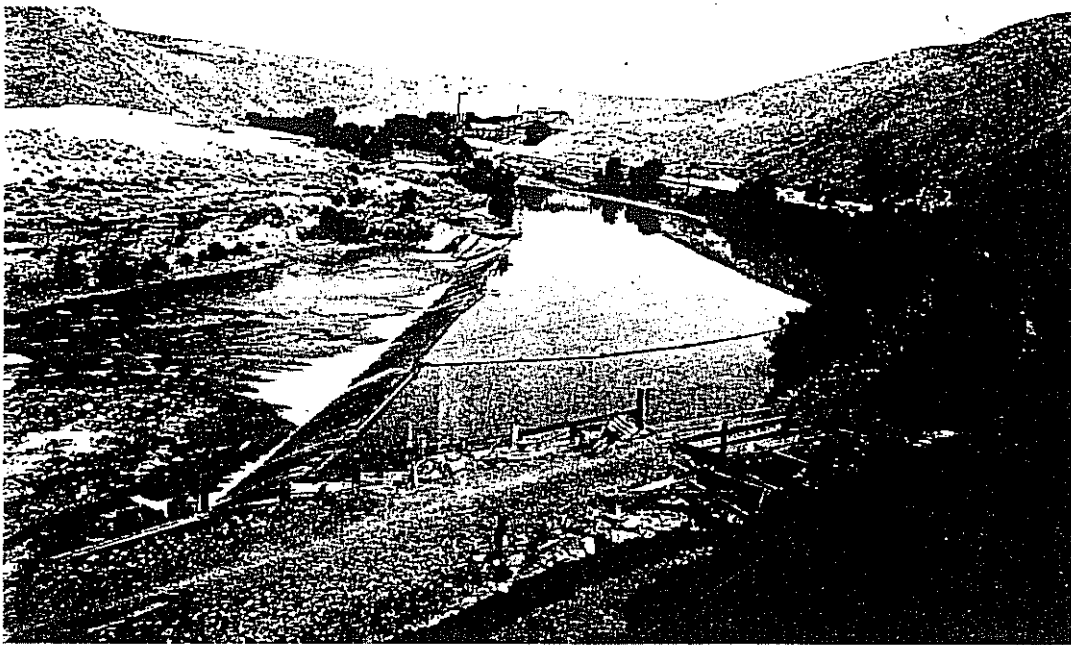
Describing the dam at the Merrimac, C.B. Barstow, a wood driver, stated that "the Merrimac had a stone dam that cost thirty thousand dollars; it was the best dam on the river." (cf. Kelley I, 62)

"Do you know whether the Merrimac dam went out in a big freshet at any time?

A. I know the dam was injured by a freshet, but it didn't go out entirely.

Q. Would the Merrimac dam, which was the best on the river, have stood a jam of logs such as went down the river?

A. Not unless they had a chute; but if the logs had broken loose and gone in a drive,



NEVADA HISTORICAL SOCIETY

The Brunswick mill, the Merrimac dam and the V.&amp;T. railroad.

there was nothing on the river that could have stopped them." (520, vol. 6, p. 722)

L.H. Taylor, under direct examination by Counsel W.E.F. Deal for the defendants, testified to the condition of the dam on 27 November 1893:

"Describe fully the condition of the dam as you found it this morning.

- A. You might say that there is no dam there. It has been allowed to go to decay. Nearly all of what was originally a dam was washed away. Some few of the old timbers are there yet, and there are some piles of stone left in the stream.
- Q. When did you first see that dam?
- A. In September last.
- Q. What was its condition then?
- A. The same as now.
- Q. Did you see the Merrimac ditch this morning?
- A. I did.
- Q. Did you go the length of the ditch down to where the arrastras are, or where the mill site is?
- A. Yes. I walked the entire length of the ditch.
- Q. Describe the ditch as it is now and its condition.
- A. The ditch as it is now is in rather a bad order, being washed out in places, so that it is wider evidently than it originally was. Still, it is capable of conveying water to

the flume which originally led water to the wheel that operated the mill. That flume is in bad order, decayed and the boards sprung and cracked open, and one place for several feet the timbers forming the bottom have dropped and broken down, so that the bottom has dropped out of it.

Q. When did you first see that ditch and flume?

A. Last September.

Q. What was its condition then?

A. The same as now.

Mr. Coffin: I will admit that the dam is washed out and the ditch in bad condition, and that the plaintiff does not propose to rebuild it until this suit is finally decided.

Mr. Deal: And the arrastras\* are dismantled and that there is no machinery for a mill there?

Mr. Coffin: I will admit that when the dam was washed out and took away their water power to operate machinery that they had a clean-up, and they tore out the arrastras and cleaned the bottom of the arrastras, and plaintiff will not rebuild until this suit is settled and their water rights determined, and then it is their intention to rebuild.

Mr. Deal: Defendants do not admit what you intend to do." (520, Defendants' vol. 3, pp. 1509-1510)



The Merrimac dam after the flood of 1907.

\*An arrastra is a rude dragstone mill.



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The Vivian mill viewed from the V.&T. railroad tracks, 1876. P. 318, Vol. 3, 1876.

## Vivian Mill

The Vivian mill was situated two miles below the Merrimac. The first recorded document relating to this mill is the Survey of E. Said, J.S. Henning and A.W. Potts, dated 12 & 13 April 1861. (520, vol. 13, p. 143)

William Sharon bought a two-thirds interest in the mill on 1 November 1870 for which he paid \$5000. Sharon was president of the Union Mill and Mining Company. Before Sharon bought the mill it was sold by D.J. Gasheri, Sheriff, to E. Ruhling and J.V.S. McCullough for \$4288. This was on 7 January 1864. (520, vol. 13, p. 151)

The original mill was washed away in the flood of 1861-1862. It was rebuilt in 1862. C.B. Barstow was the engineer in charge. He testified, under direct examination by Counsel Coffin, as follows:

“What is your age, residence and occupation?

A. My age is seventy years; residence Napa City; occupation mining engineer.

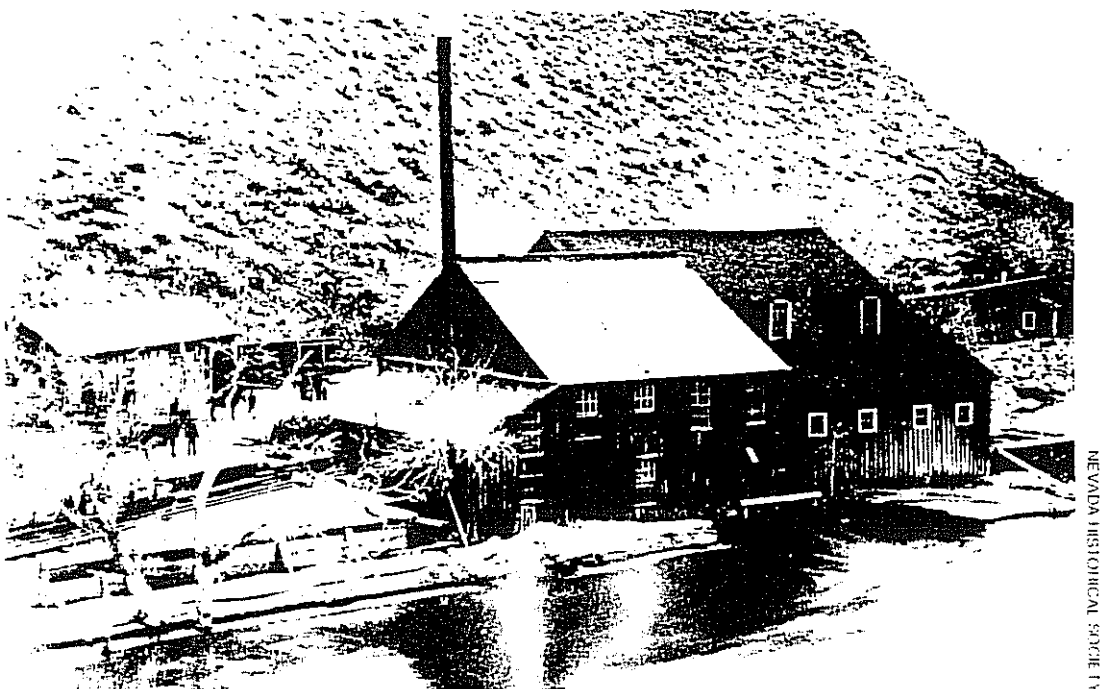
Q. How long have you been engaged in that line of business?

A. Forty-five years.

Q. Were you ever in the Washoe country in Nevada?

A. I was there July 19, 1859.





NEVADA HISTORICAL SOCIETY

The Vivian mill, winter scene.

- Q. Were you in any way connected with any of the quartz mills on the river?
- A. Yes, sir.
- Q. Which one?
- A. With the Vivian mill.
- Q. Did you build the Vivian mill?
- A. Yes, sir.
- Q. When?
- A. In 1862. It was washed away in 1861.
- Q. Was the mill that you built in 1862 the original mill?
- A. No, it was built to replace the mill that was washed away in the winter of 1861.
- Q. When was the first mill built, if you know?
- A. In the winter of 1859-60.
- Q. When was it washed away?
- A. I built the mill in 1859-60. That mill belonged to Hansen and Woodworth.
- Q. When did that mill wash away?
- A. It washed away in the winter of 1861-62.
- Q. Was there a freshet in the Carson River in the winter of 1861-1862?
- A. Yes, there was a very great freshet that winter.
- Q. You rebuilt the mill what year?

- A. In the winter of 1862-63.
- Q. Was the mill completed in the spring of 1863?
- A. Yes, I got it running in June, 1863.
- Q. When was the Vivian ditch dug?
- A. In 1861, Zenos Wheeler and I put up the first mill together and I put up the last one alone; that is, I had charge of the work of building the mill." (520, Plaintiff's vol. 2, pp. 713-714)

According to Kelly, (2, p. 92) the ditch leading from the Carson River to the mill was 1100 feet long.

Augustus Cutts was foreman of the Vivian mill in 1881 and superintendent of it after that. He was still superintendent when testifying in 1893. (520, Plaintiff's vol. 2, p. 422)

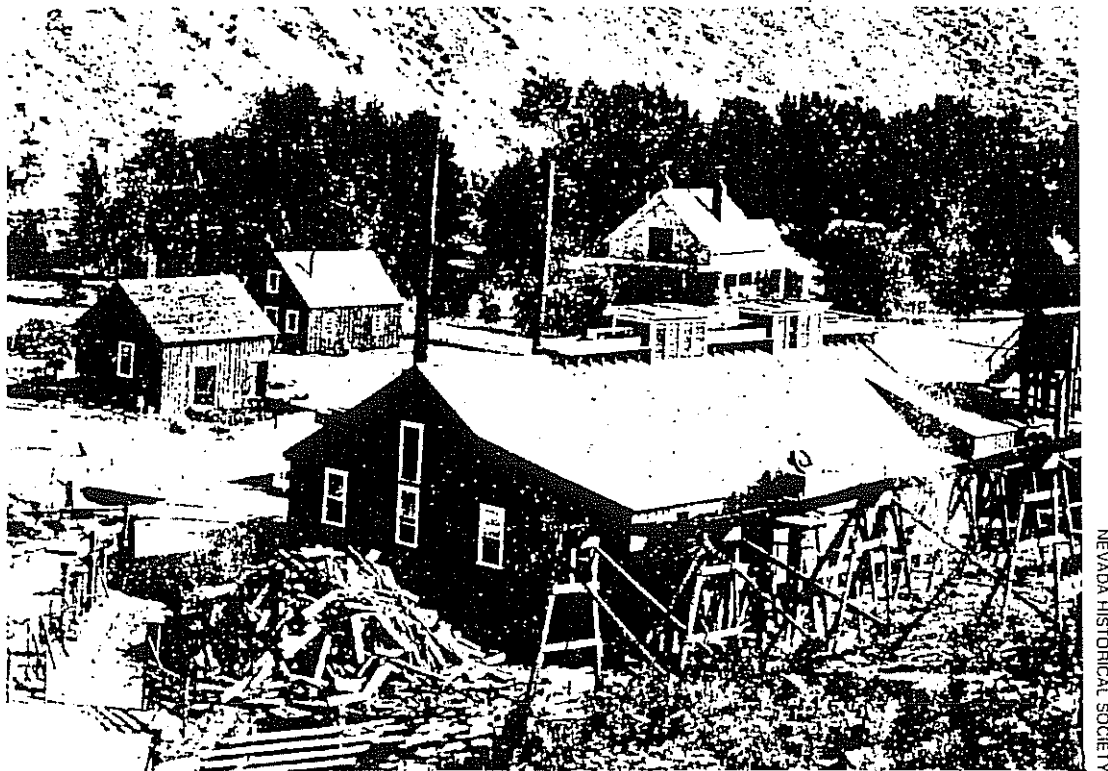


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The Vivian mill, 1876.

- A. I did.
- Q. Who drew it?
- A. It was drawn in Senator Stewart's office. I think Mr. Rising drew it; I am very sure he did.
- Q. Judge Rising of Nevada?
- A. Yes, sir.
- Q. Do you know what became of that deed?
- A. I do not, except it was burnt with my papers in Virginia City. I built a house in Virginia City, and moved into it, and all my papers, in 1863, and the house was burnt up, containing all my papers.
- Q. Do you know when you purchased the property from Elkana Said—the water right and the mill site and whatever claims he had on the Carson River?
- A. I think I purchased it in the winter of 1860—towards the spring or winter of 1860. Let me see, it must have been later than that.
- Q. Do you recollect whether or not you gave him a mortgage back for the purchase price; refresh your recollection by a copy of the abstract, showing the mortgage, and see if that will give you the time.
- A. Yes, it was in 1861.
- Q. Can you fix the date or about the date when you purchased the water right and Santiago mill site from Elkana Said?
- A. It was in 1861.
- Q. What date?
- A. August 22, 1861.
- Q. Did you erect a quartz mill on the Santiago mill site that you purchased from Said?
- A. I did not erect the mill, but I furnished all the money to erect it; Said, Stewart and Henning erected it, and Stewart and Henning got to quarreling with Said, and he finally got me to buy him out.
- Q. Was the mill known as the Stewart and Henning mill?
- A. Yes, it was always known as the Stewart and Henning mill until we sold to Thompson and Reynold.
- Q. When was the mill built?
- A. It was built in the spring of 1861; it was commenced early in the spring; I think in February, 1861.
- Q. Do you remember the ditch that was constructed to carry water to the mill to furnish power?
- A. Yes, sir.
- Q. Was the ditch built at the same time the mill was?
- A. Yes, and may be before the mill.
- Q. How large a ditch was built there?

- A. As near as I can recollect, that ditch was about two thousand feet long, and between ten and twelve feet wide, and between six and seven feet deep; about six feet deep, I think.
- Q. Was there a dam built to divert water out of the river into the ditch?
- A. Yes, they built a dam right across the river.
- Q. Do you know whether the mill was finished and put in operation in 1861?
- A. It was finished and put in operation along in—I am very sure that the mill was running in 1861—in May, 1861; they run it a little while before I bought in.
- Q. But you say you furnished the money to build the mill?
- A. I loaned them the money to build the mill, and to cut the ditch and build the dam.
- Q. And that fact serves your recollection as to dates?
- A. Yes, I was there two or three times a week when they were building the mill.
- Q. How long did you own it before you disposed of it?
- A. I don't remember that; if you have the deed to Thompson and Reynold you will see.
- Q. That is dated November, 1862.
- A. That is correct." (520, Plaintiff's vol. 2, pp. 703-706)



The Santiago mill in winter, 1870s.

William D. Torreyson testified that the Santiago dam went out in the flood of 1861-1862. (520, Plaintiff's vol. 1, p. 117)

Augustus Cutts, who was a mill foreman and superintendent for many years from 1863 on, testified in 1893, under direct examination by Counsel Coffin:

"I reside in Carson here; I am managing the Vivian and Santiago mills; I am fifty-five years old.

Q. You simply reside in Carson for the purpose of sending your children to school?

A. Yes, and my family reside in Carson.

Q. When did you first know the mills on the Carson River and which mill did you know first?

A. I went to work at the Santiago mill in 1863.

Q. How long did you work at the Santiago?

A. Until 1876, and then I went east and did not go on the river again until 1891.

Q. From 1863 to 1876 you worked at the Santiago mill?

A. In 1881, I went to work at the Vivian mill and have been working there ever since.

Q. As its superintendent?

A. I have been superintendent of the Vivian for the last eight years; I was foreman before that.

Q. When you went to the Santiago in 1863, what did you find there in the way of a ditch, dam and mill?

A. The ditch was the same then as it is now. They had an old rock dam at that time, and the mill was at the same place it is now.

Q. Did the old rock dam go out at any time?

A. It was torn out and rebuilt; it washed out and filled up every year; and in 1876 a wooden dam was put in.

Q. How high would you expect to keep the banks levelled up above the water?

A. Six or eight inches and a foot wouldn't be too much.

Q. You think that since 1863 the lower bank of the Santiago ditch has been levelled up in low places?

A. Yes, and raised up.

Q. Do you know how wide the ditch is now?

A. No, sir; I have never measured it. But it is not carrying as much water now as it was in 1863.

Q. The ditch is not carrying as much water now as it did in 1863?

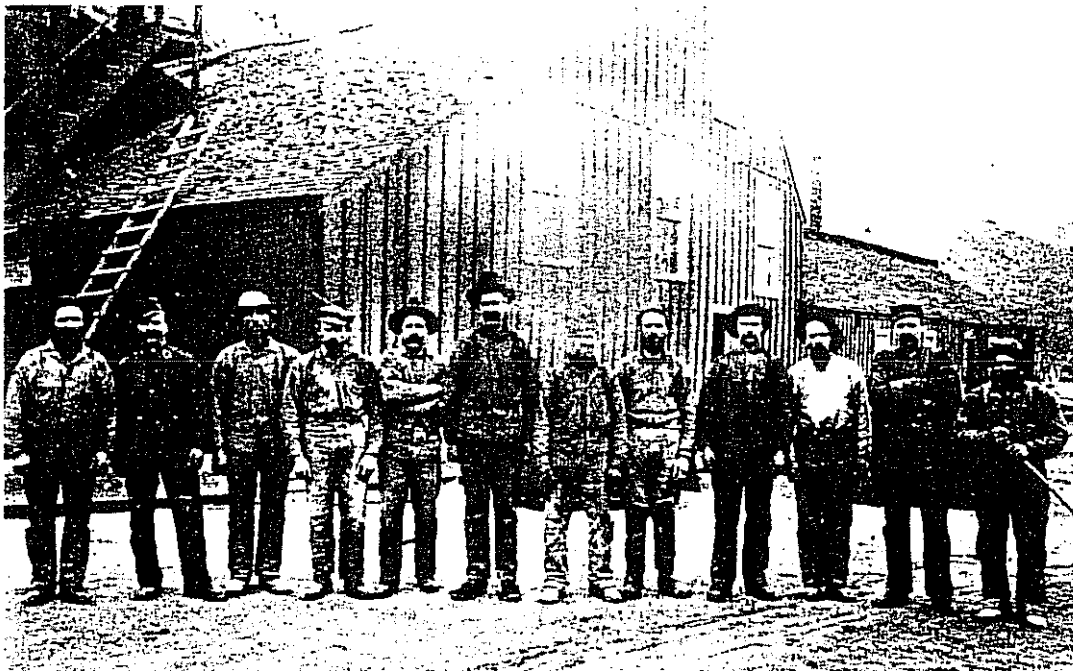
A. No, sir, but we could carry double the amount of water that we are now carrying if we wanted to.

Q. Do you ever carry double the water now that you did in 1863?

A. No, I don't know that we ever run any more water now than we did in 1863.

Q. But you have raised the bank, so that more water could be put in if you wanted it?

- A. Yes, sir.
- Q. Why did you do that?
- A. Our idea was to get the water a little higher on the wheel, and get more pressure and more fall on the wheel in that way, but we had all the water we wanted in the ditch without raising the bank." (520, Plaintiff's vol. 2, pp. 422-423)



AUSTIN COLLECTION

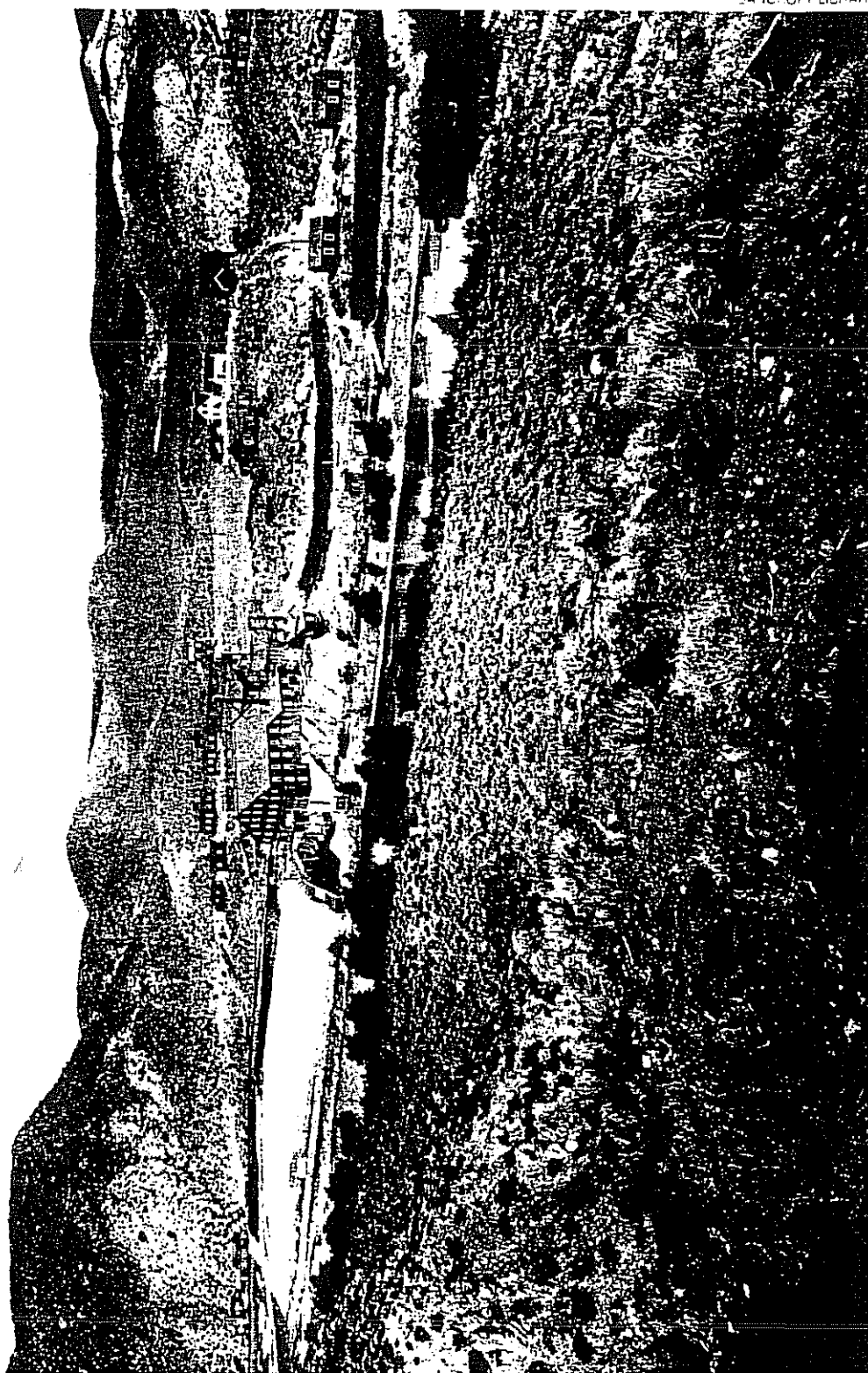
Santiago mill crews, 1878.



AUSTIN COLLECTION



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The Eureka mill, 1876. V. 5, p. 10, 11, 12.

## Eureka Mill

447-448, 520

The Eureka mill was situated on the Carson River in Lyon County one mile below the Santiago. According to Kelly, (2, p. 380) its proprietors were M.S. Hurd, C.T. Wheeler, and Ferdinand Dunker. In respect to its situation, however, both L.H. Taylor, as quoted below, and J.P. Woodbury stated that the mill was two miles below the Santiago.

The Eureka came into the possession of the Union Mill and Mining Company before 1875, when it is named by Angel (502) as one of a number of mills owned by the above company and its president, William Sharon. Neither title data nor abstract is included in volume 13 of abstracts submitted by the company to the court.

According to Kelly, (2, p. 380) the mill was built in 1861. The water of the Carson was brought to it through a ditch and flume 1500 feet long from a dam 120 feet wide. J.P. Woodbury, who had been superintendent of the mill for eight years, testified in 1893 that the Eureka mill had burned down in May of the previous year. (520, Plaintiff's vol. 1, p. 344)

The Eureka ditch and flume were examined by L.H. Taylor in 1893. His report of the survey was submitted to the court in writing; it follows:

"The Eureka mill ditch takes water from the left bank of the Carson River from a substantial timber and stone dam, about two miles below the Santiago mill.

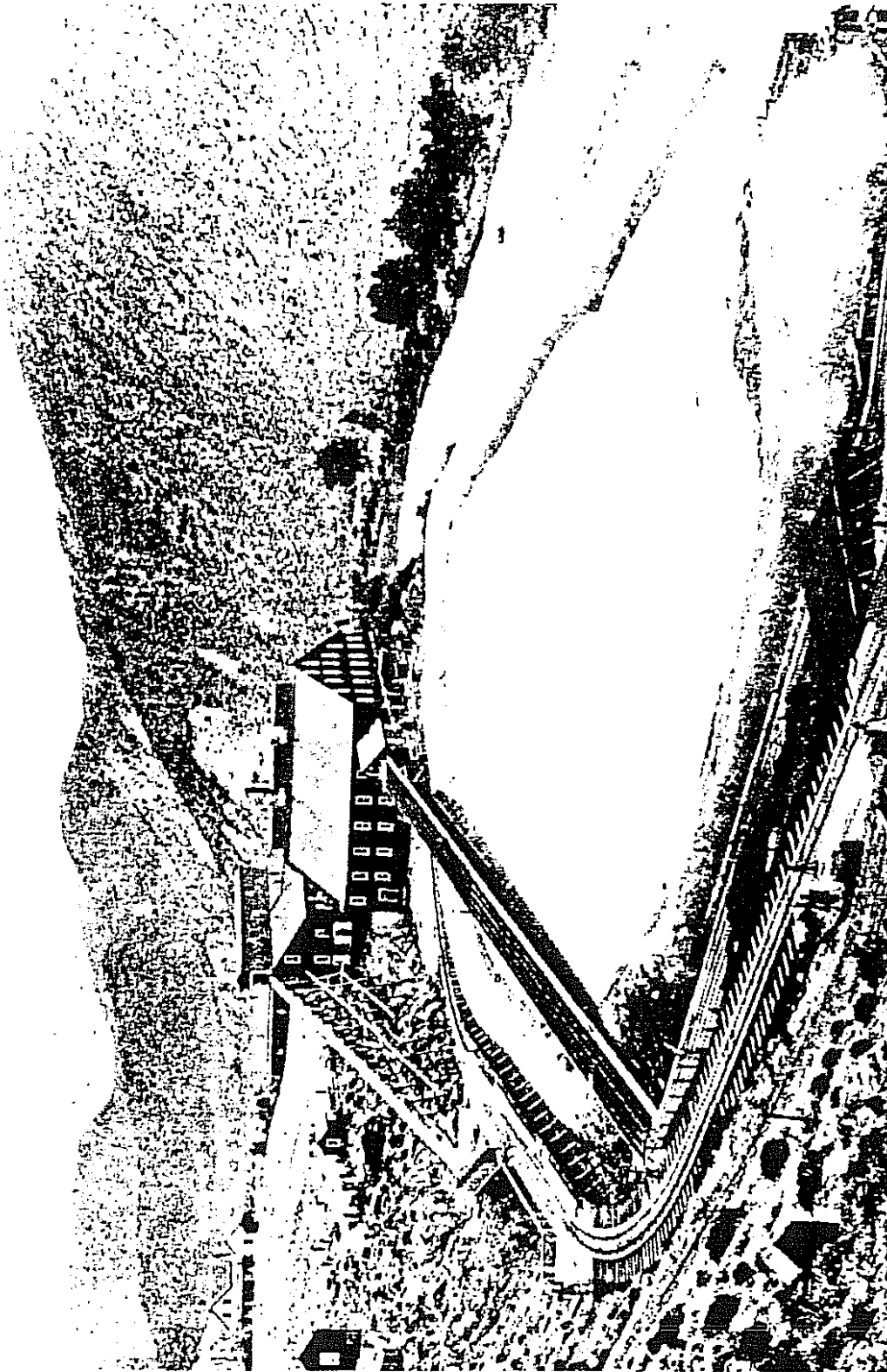
This ditch, or flume, for it consists of a wooden flume through its entire length, has a width inside of 12 feet and a depth of 4.83 feet.

On September 25, 1893, I made a measurement of this flume, selecting a place where the grade was uniform, and measuring a section 853 feet in length. I found the total grade in this distance to be 0.194 of a foot, and the depth of water flowing 2.5 feet. The sectional area of the stream was 31.20 square feet, the mean radius 1.814 feet, and the discharge 87.05 cubic feet per second, calculated by Kutter's formula, with a coefficient for roughness of 0.012. This discharge I think a little above the truth, owing to the fact that I did not take into consideration a few battings nailed over the cracks on the inside of the flume.

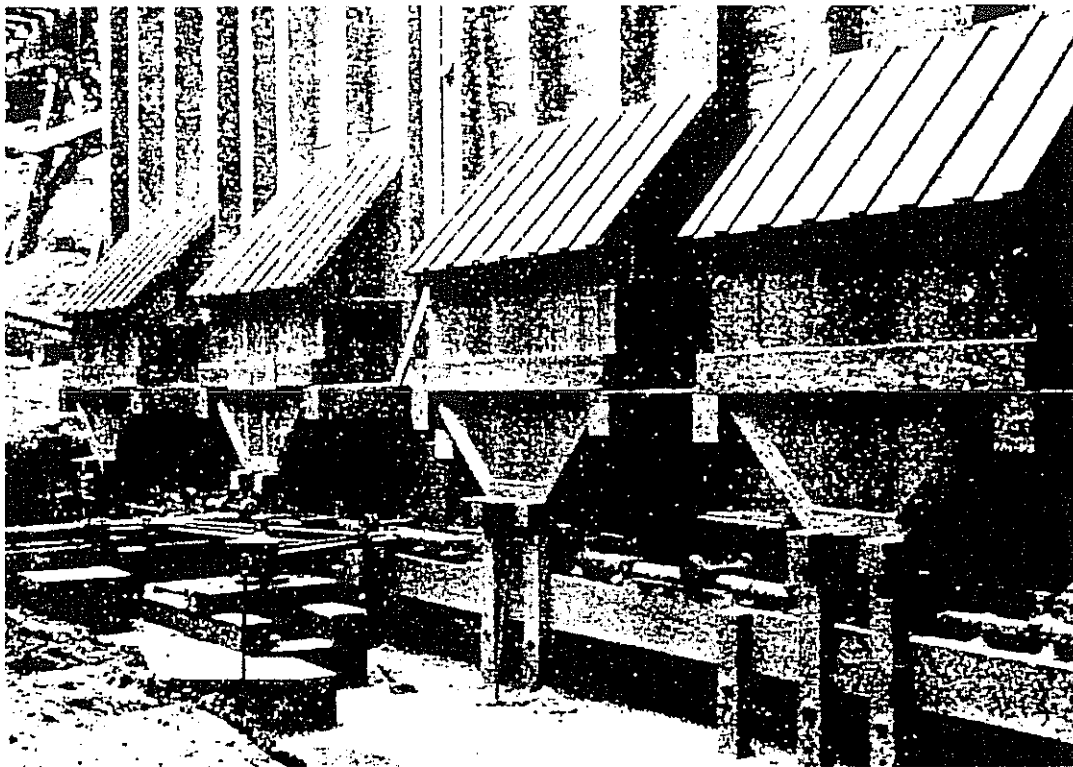
I also took the velocity of the current in this flume by means of surface floats, finding the maximum velocity to be 3.08 feet per second, which multiplied by the coefficient deduced by Bazin 0.83 gives a mean velocity of 2.55 feet per second, and a discharge of 79.56 cubic feet per second, or 3978 miner's inches, under a 4-inch pressure, which I think to be very close to the truth.

Of this amount of water, I found 28.90 cubic feet per second, or 1445 miner's inches escaping through a gate inside of the flume a short distance above the mill; the balance of 50.66 cubic feet per second, or 2533 miner's inches were passing through the wheel, and operating all the machinery of the mill." (520, Plaintiff's vol. 3, pp. 187-188)

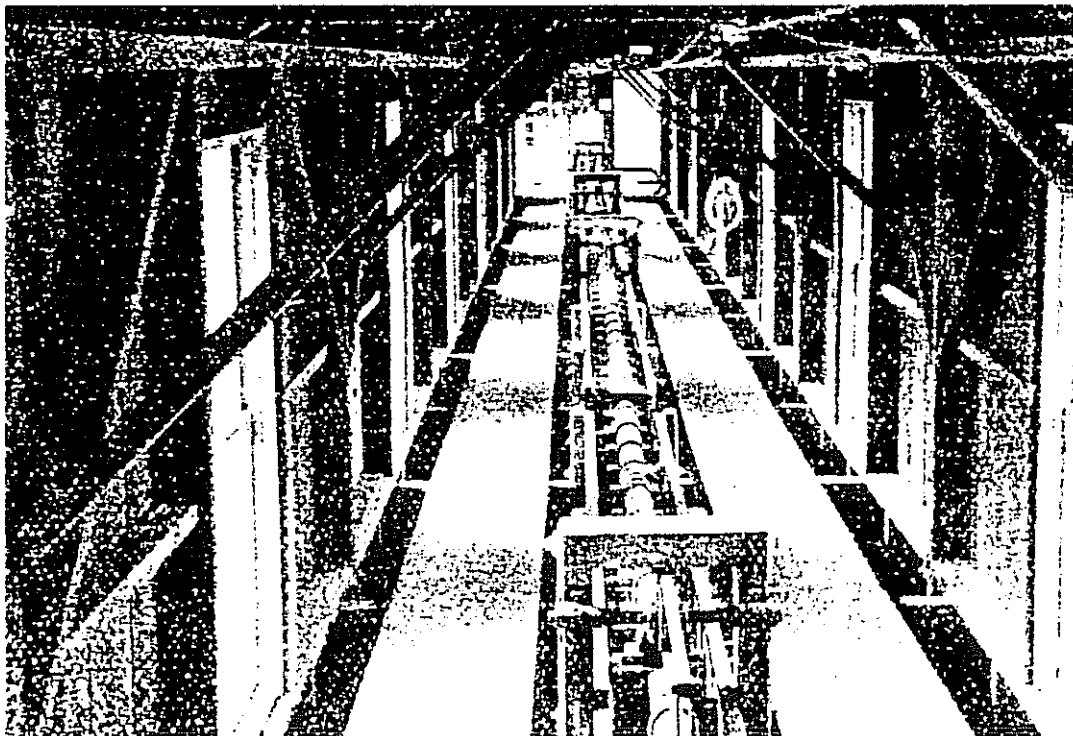
NEVADA HISTORICAL SOCIETY



The Eureka mill, 1885. (Courtesy of the Nevada Historical Society)

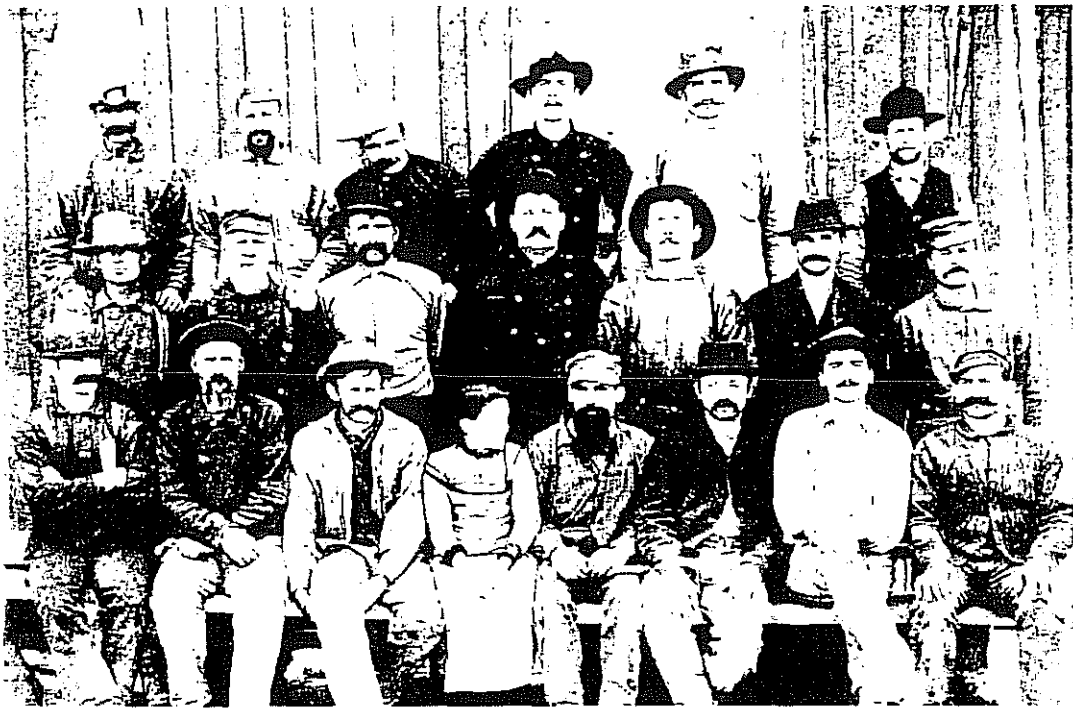


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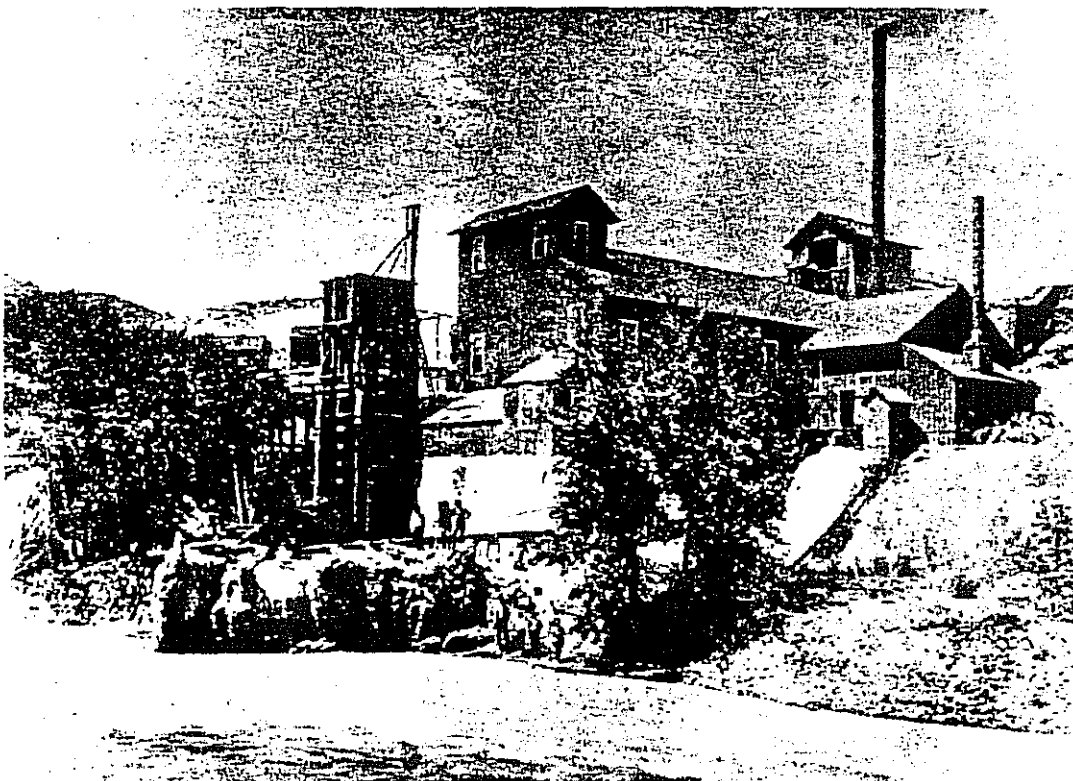
NEVADA HISTORICAL SOCIETY

Eureka mill tailing bins and conveyor.



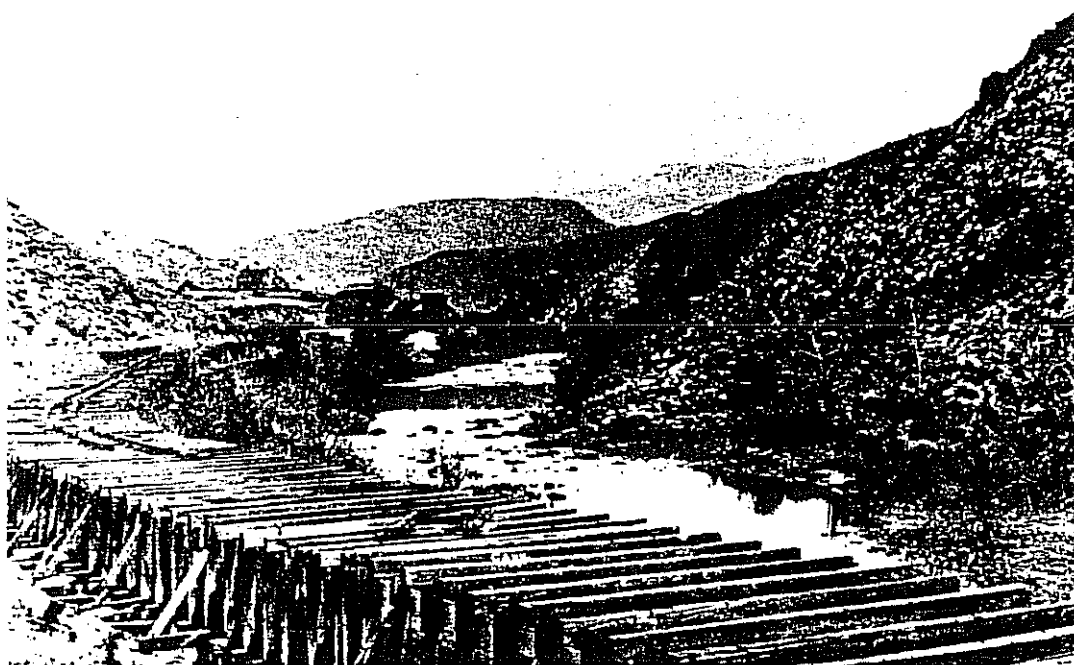
NEVADA HISTORICAL SOCIETY

Eureka mill crew in the 1880s.

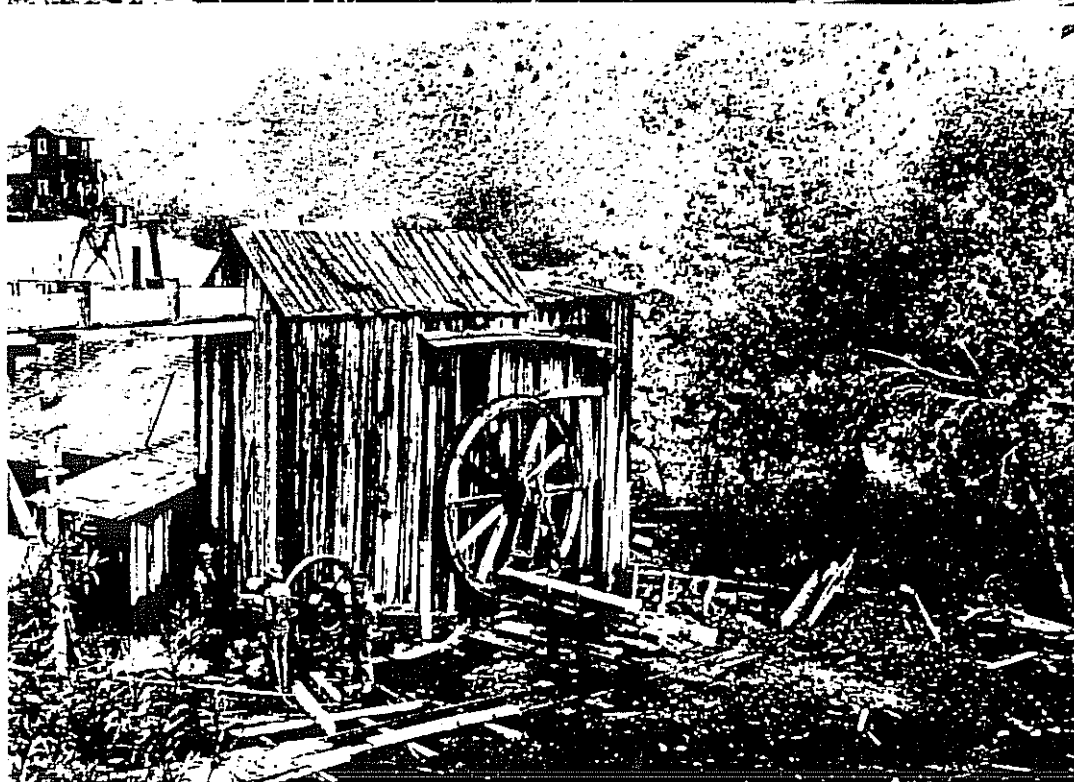


NEVADA HISTORICAL SOCIETY

The Eureka mill viewed from downstream. About 1885.



NEVADA HISTORICAL SOCIETY

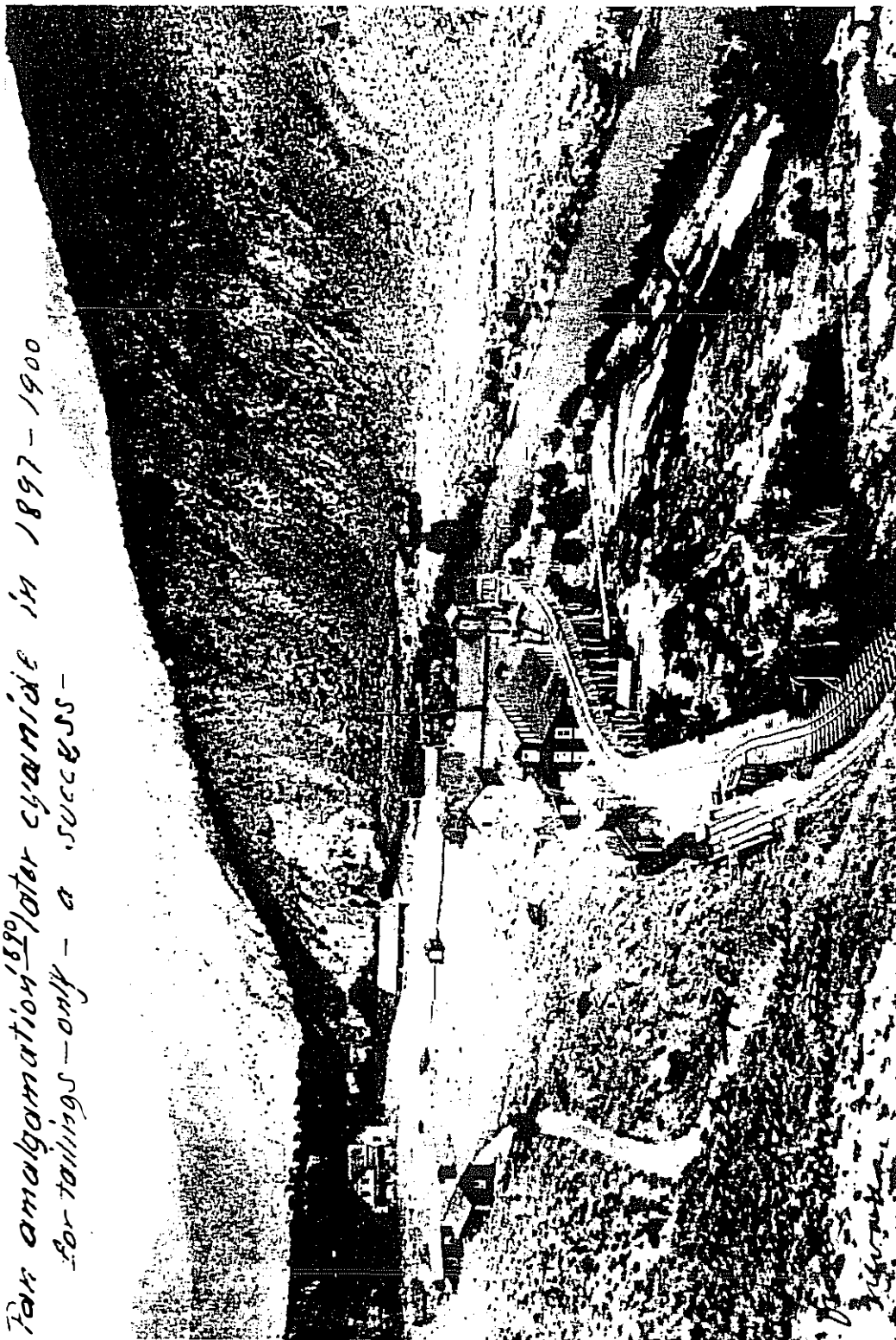


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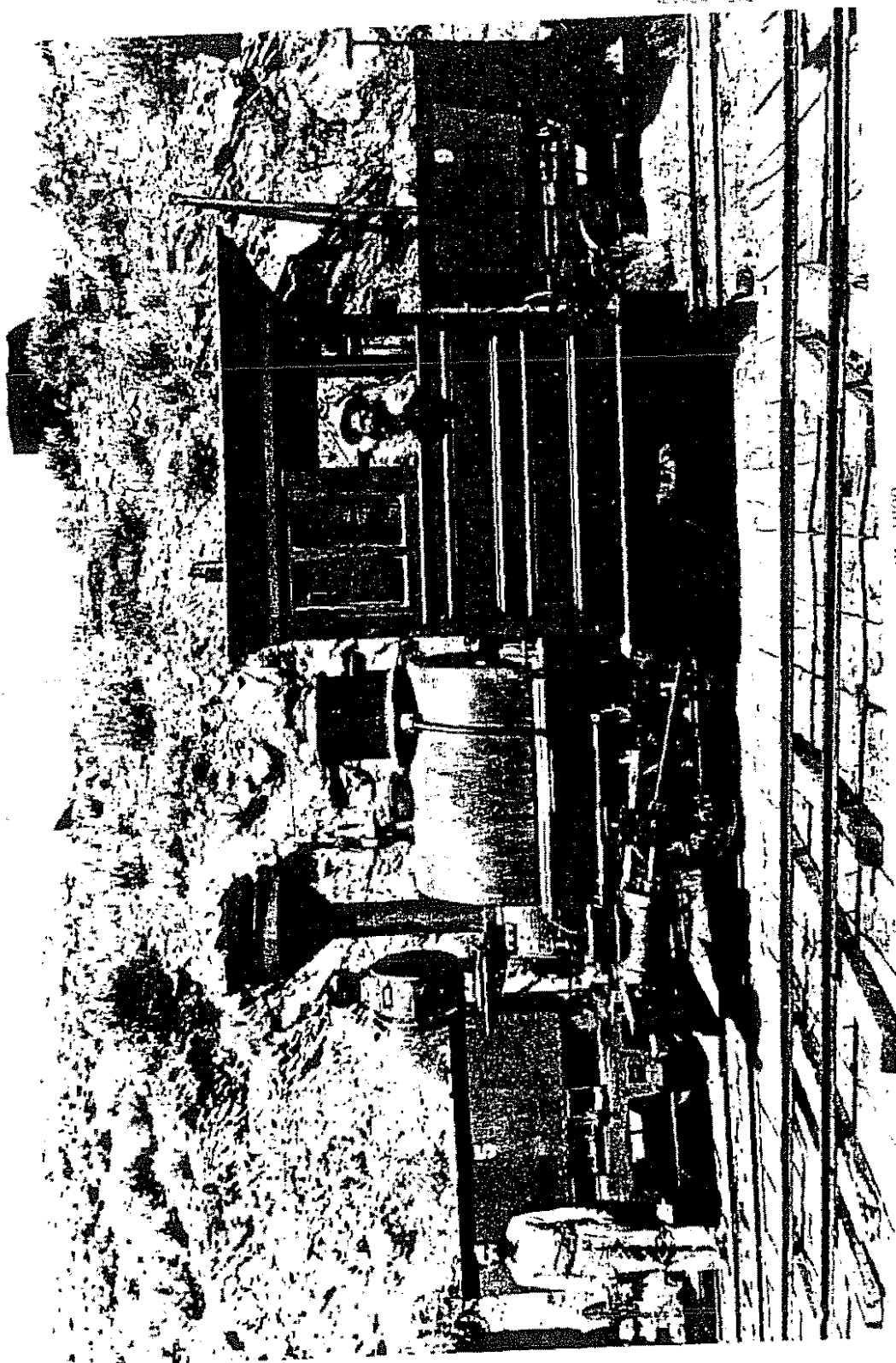
The Eureka mill flume and/or railroad tracks and an outbuilding. After 1885.

NEVADA HISTORICAL SOCIETY

*For amalgamation <sup>1890</sup> later cyanide in 1897-1900  
for tailings - only - a success -*

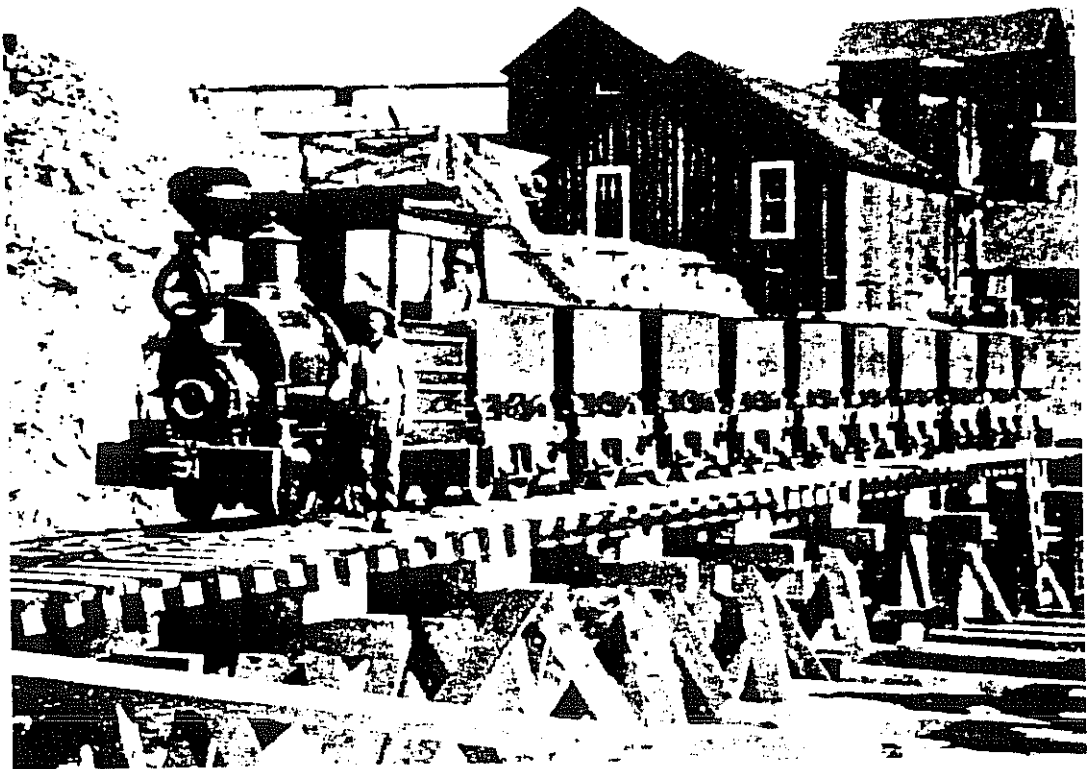
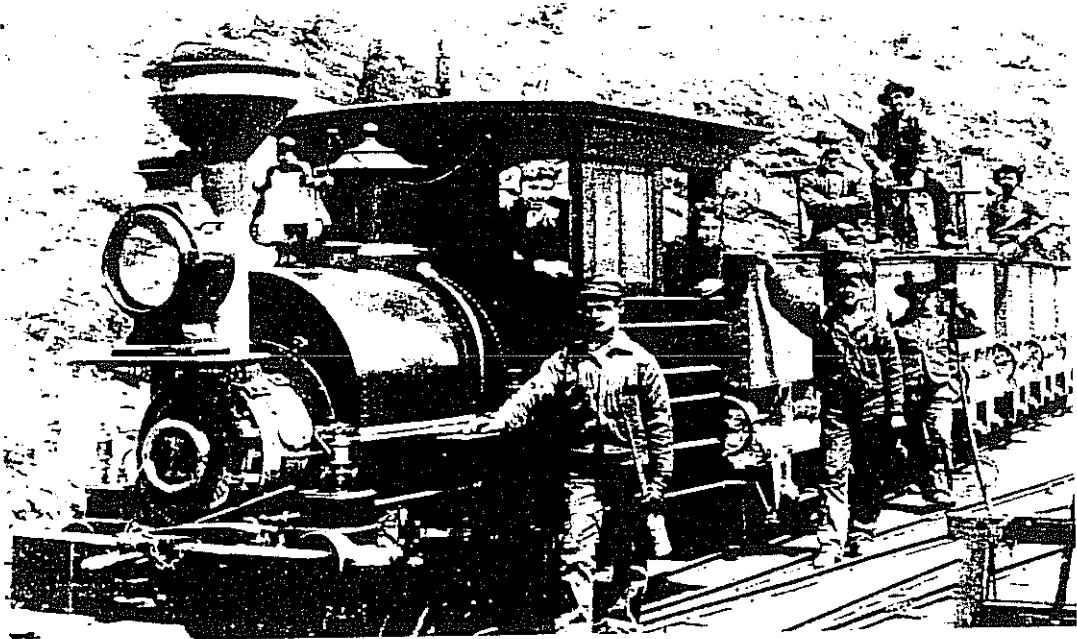


The Eureka mill, 1897-1900.



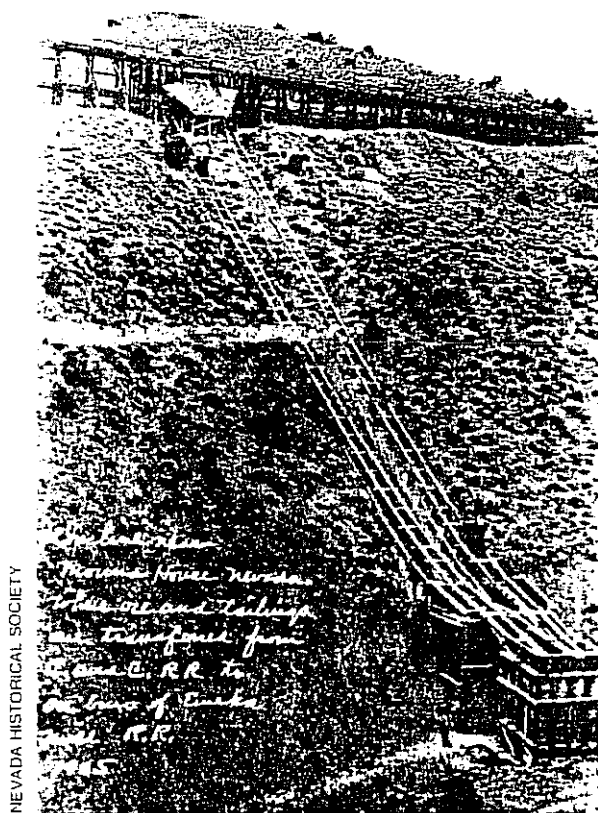
Locomotive at the Eureka mill, 1899.



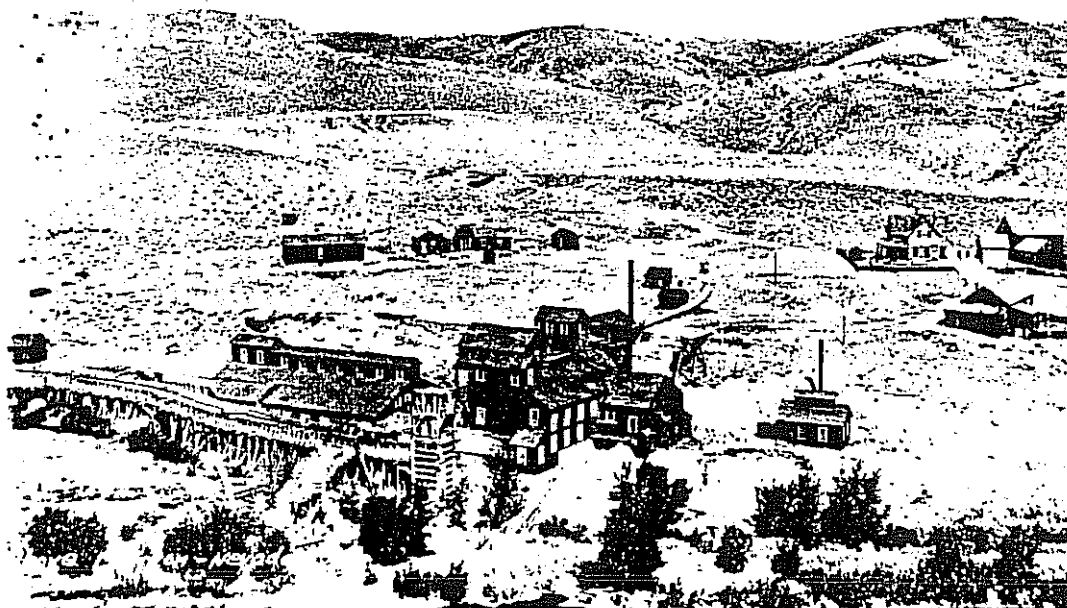


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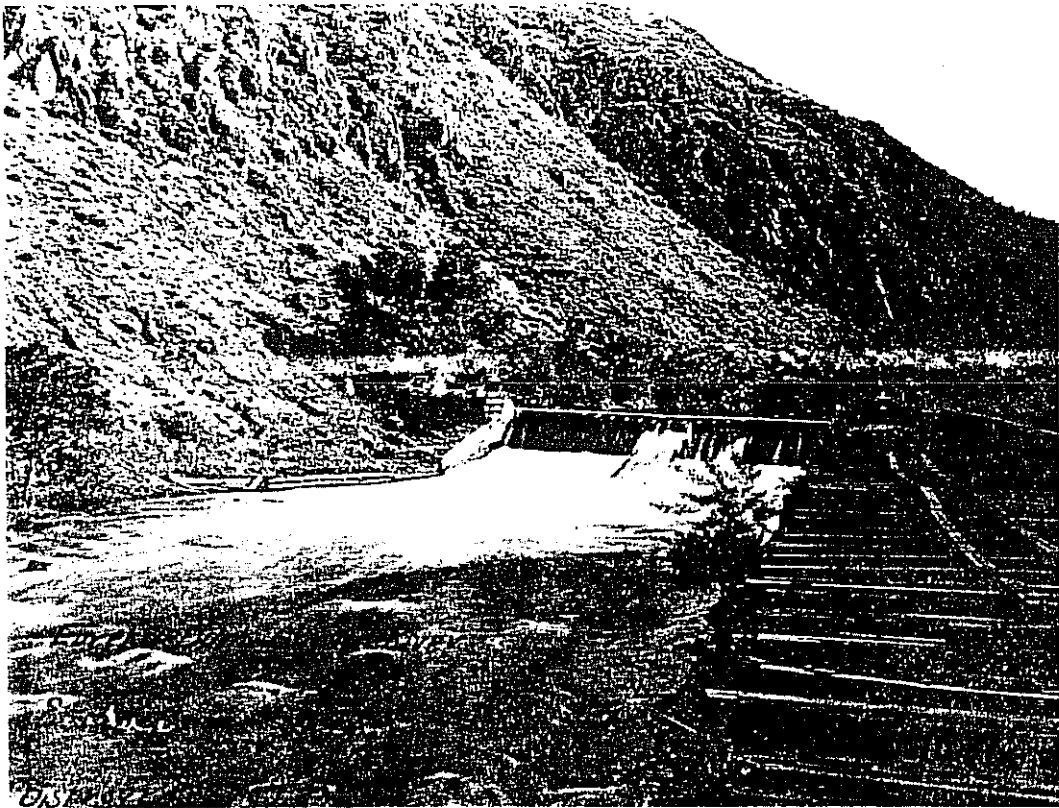
The Eureka mill, ore trains.



Eureka mill incline where ore was transferred from Carson and Colorado railroad cars to the mill's bins. 1905.

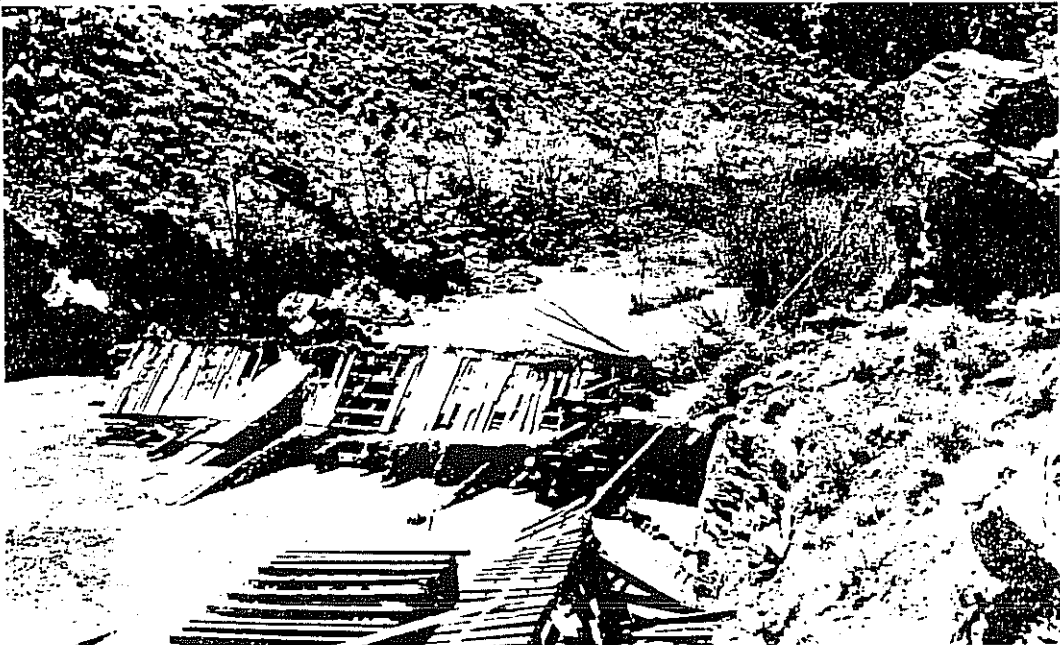


The Eureka mill. 1905.



NEVADA HISTORICAL SOCIETY

The Eureka mill dam after the flood of 1907.



NEVADA HISTORICAL SOCIETY

The Eureka mill dam.

## Franklin Mill

The Franklin mill was situated on the Carson River in Lyon County below the Eureka mill. The first recorded document relating to this mill was a petition by Saml. L. Chapin to the County Court of Carson County, Utah Territory, dated 22 June 1860. This was granted. (520, vol. 13, p. 190)

On 12 May 1865, Wm. Johns deeded a one-half interest in the Franklin mill to William Sharon for \$6000. On 8 February 1867 Saml. L. Chapin deeded a portion of the mill to William Sharon. This property was described in an earlier instrument as the Winters and Woodworth mill. (520, vol. 13, pp. 195, 217, 224)

On 7 May 1868, William Sharon deeded the mill to the Union Mill and Mining Company. (520, vol. 13, p. 233)

L.H. Taylor, in his report filed in the court, described the condition of the mill site in 1893.

"The Franklin mill ditch takes water from the Carson River below the Eureka mill.

While there is a little water in the ditch at present (26 September 1893), it apparently has not been in use for two or three years, at least.

The dam is in rather bad order, some of the timbers being decayed. The headgate is rotted out and partly filled with rocks, and the ditch and flume are in very bad order being partially filled up with silt, and the flume having settled much from its original grade.

I found it impossible to determine what may have been the original carrying capacity of the main flume. Its width, however, is eight feet, and depth from five to six-and-one-half feet.

Two small branch flumes take off from the main flume near its lower end from the left side, the first one of which is five feet wide, 1.33 feet deep and very short. It furnished water to run an arrastra operated by a breast wheel 13.5 feet in diameter, to which the water from the flume was admitted through an opening in its bottom next to one side 0.45 of a foot in width by 5.25 feet long, under a maximum head measured to high water mark in the flume, of one foot giving a discharge of about 11.94 cubic feet per second, or 592 miner's inches.

The second flume is about 130 feet long, is 4.1 feet wide and 1.9 feet deep; it furnished water to a tailings mill run by an overshot wheel 12 feet in diameter, to which the water was admitted through an opening in the side of the flume 7.5 feet wide and 0.9 of a foot deep, under a maximum head above bottom of 1.4 feet, measured to high water mark in the flume, giving a discharge of 35.80 cubic feet per second, approximately, or 1790 miner's inches.

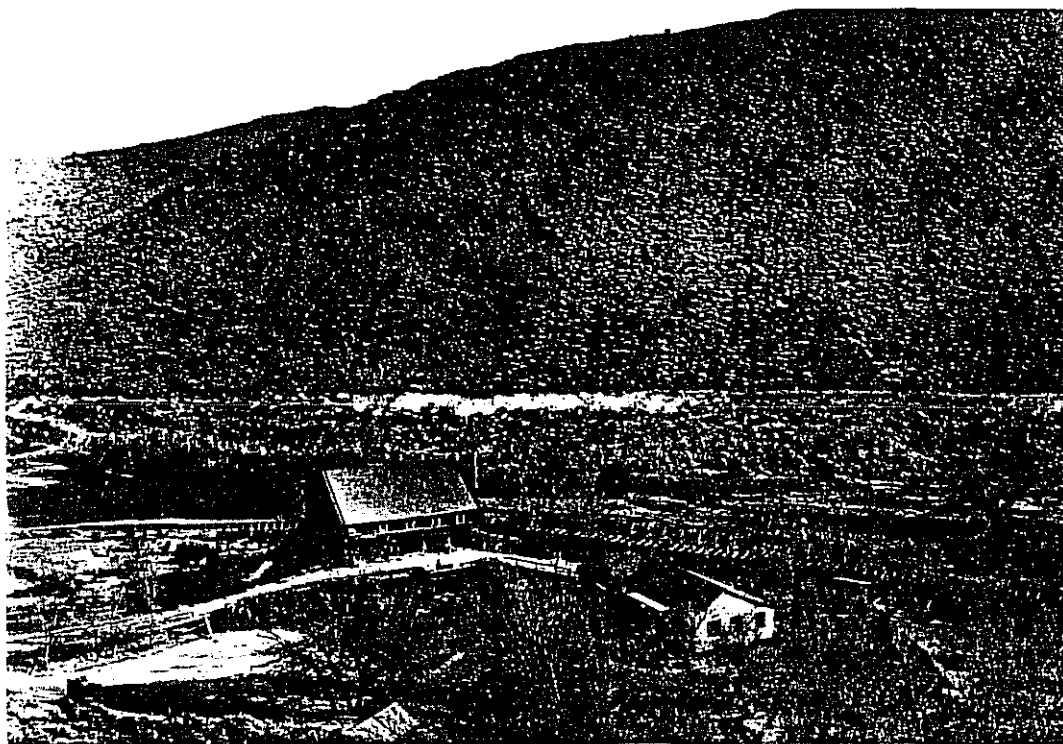
The original Franklin mill is not now in existence." (520, Plaintiff's vol. 3, pp. 188-189)

( 1893 )

NEVADA HISTORICAL SOCIETY

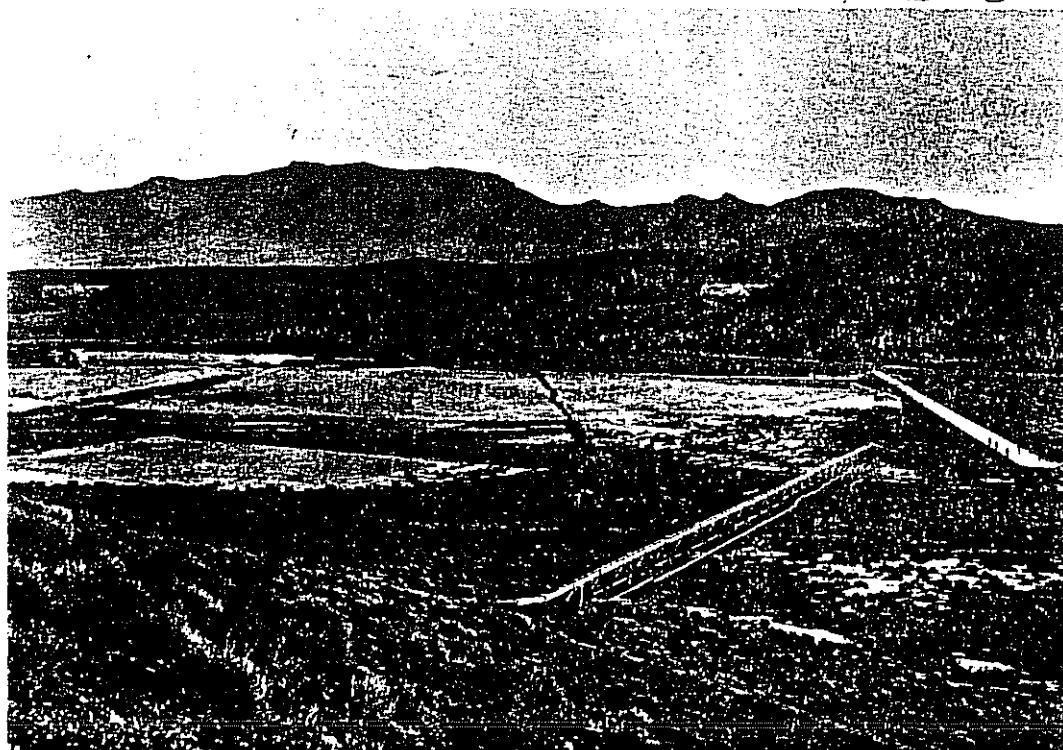


The Franklin dam.



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The Franklin and Woodworth mills, 1876. 15 YEARS OLD



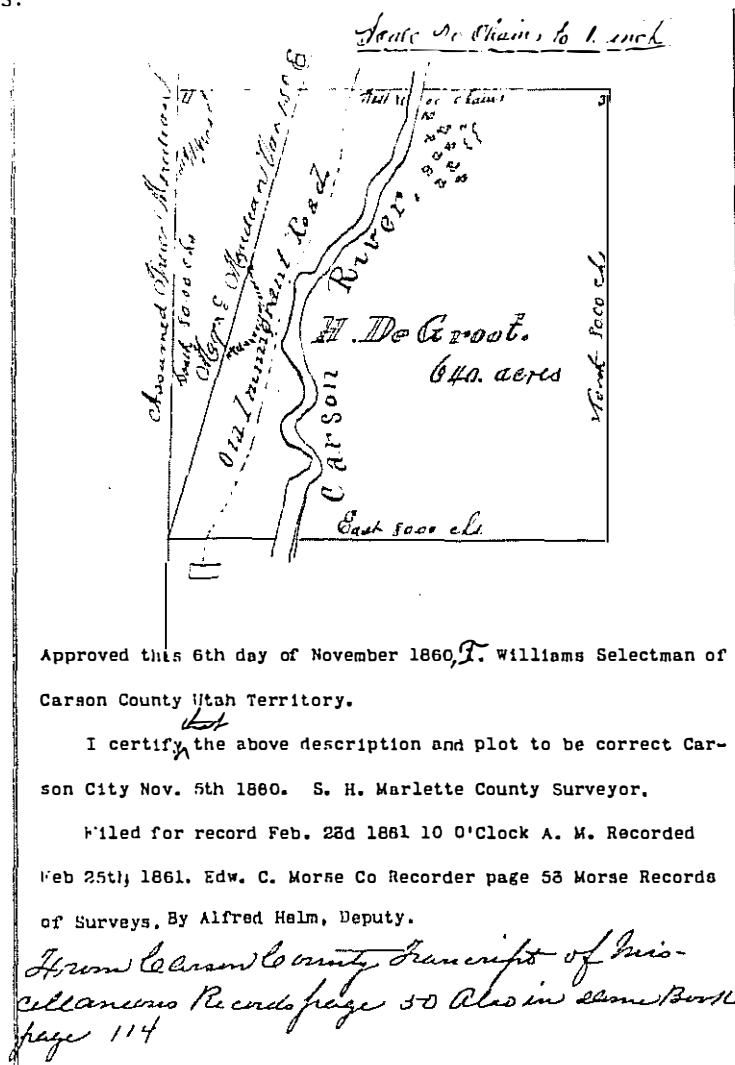
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## Rock Point Mill

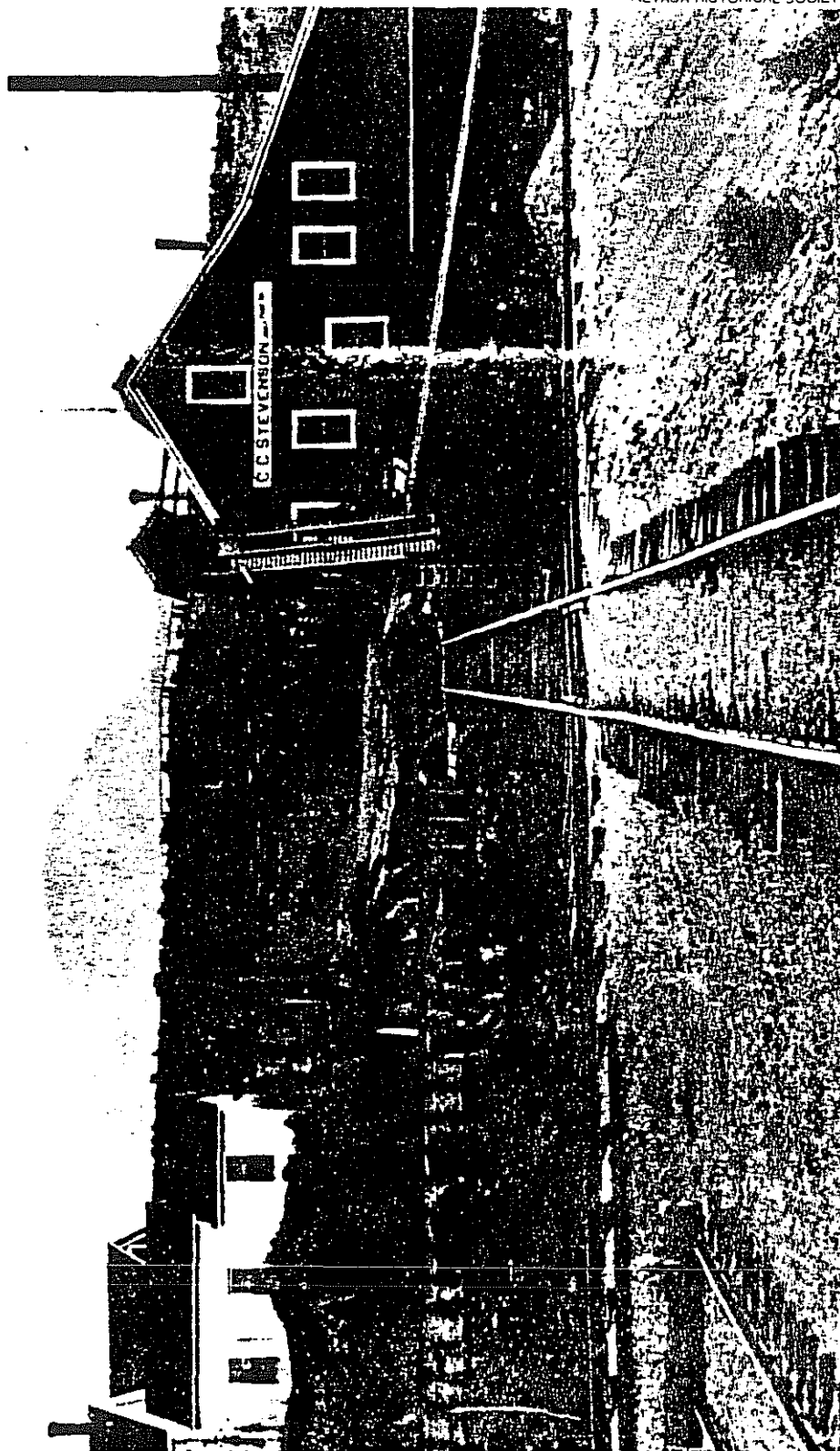
The Rock Point mill was situated in Lyon County one half or one quarter of a mile below Dayton and opposite the point where the Sutro Tunnel was later opened up. (Kelly 1, pp. 220-221 and Kelly 2, pp. 384-385) The first recorded documents relating to this mill are the Survey of Land and Water Claim of journalist Henry DeGroot, dated 31 October 1860, and a deed from Francis Tagliabue to Henry DeGroot, dated 27 February 1860. (520, vol. 13, p. 278, 282)

The mill was deeded to the Union Mill and Mining Company on 11 August 1869. This deed conveyed one-half the property for the sum of \$12,500. (520, vol. 13, p. 293)

Francis Tagliabue, a Deputy Mineral Surveyor and a civil engineer, testifying in 1893, under direct examination by Counsel Coffin, explained the apparent confusion in the records.



Survey of De Groot claims, 1860.



NEVADA HISTORICAL SOCIETY

The Rock Point mill. 1882. 21 YEARS OLD



"I wish to call your attention to the Rock Point mill at Dayton.

- A. Yes, I remember it.
- Q. Did you have some acquaintance with that mill and property?
- A. Yes, sir; I was the first surveyor of Lyon County; I was appointed by Governor James W. Nye, in 1860 or 1861.
- Q. Did you know William R. Johnson?
- A. Yes, he was a partner of mine in Dayton in 1859, where we had a store.
- Q. Was William R. Johnson the original locator of the water right at the Rock Point mill?
- A. Yes, he was a partner with myself at the time he made the location of that water right.
- Q. Where is Johnson now?
- A. He is underground. He was murdered at Aurora, and four men were hung for his murder.
- Q. In the abstract of title, page 277, there is the notice of location of Johnson—on page 277 there is an abstract of deed from Francis Tagliabue to Henry DeGroot—I wish you would examine that.
- A. Yes, sir.
- Q. In your deed it is recited that you had a deed from William R. Johnson, executed October 24, 1859; if it should turn out to be the fact that no such a deed is on record in Lyon County, and in the office of the County Recorder of Lyon County, Nevada, what do you say?
- A. My remembrance is that I handed the deed to DeGroot, and since then I have paid no attention to it whatever.
- Q. Then there was such a deed executed?
- A. Yes, William R. Johnson gave me the deed to show my interest in that water right—in that contract and in that location he made in Dayton.
- Q. And in the meantime, and before it was recorded, he was killed?
- A. No, sir; he was killed a long time after I supposed it was recorded.
- Q. But that deed was executed, and was once in existence?
- A. Yes, it conveyed one-half to me; that is my recollection of it. I supposed it was recorded at the same time.
- Q. If it was not recorded, you do not know the reason why it was not?
- A. No, sir; I have no knowledge of it since that day." (520, Plaintiff's vol. 2, pp. 625-626)

Thomas J. Tennant, testifying in 1893, under direct examination by Counsel Coffin gave the following information:

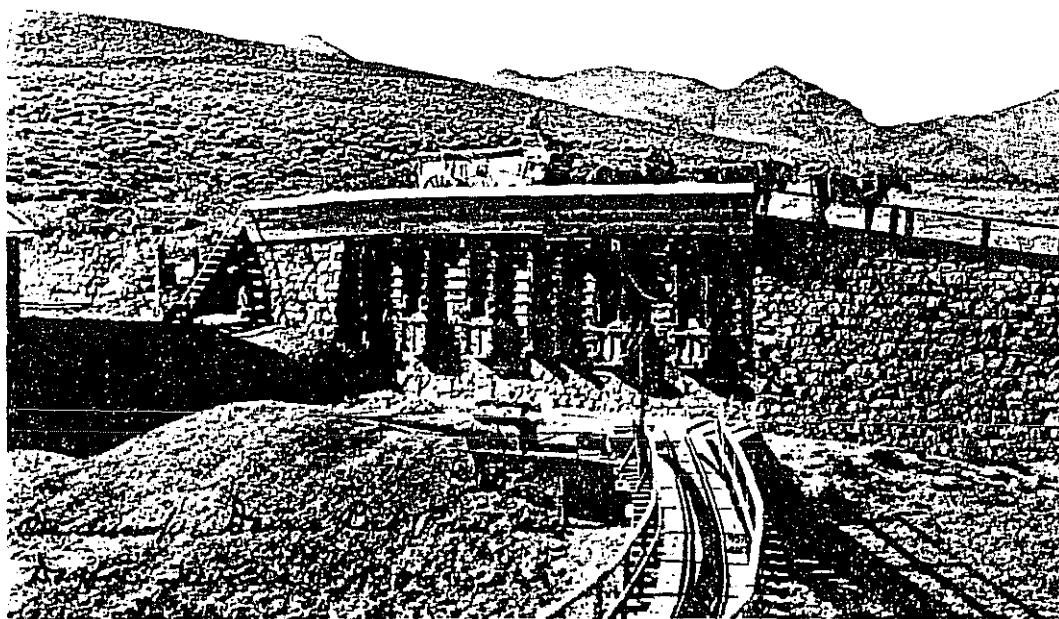
"Do you know in 1861 any mill being built on the Carson River?

- A. Yes, sir.



NEVADA HISTORICAL SOCIETY

The Rock Point mill, pan floor. 1882.



NEVADA HISTORICAL SOCIETY

Rock Point mill ore dump. 1906.



NEVADA HISTORICAL SOCIETY

Rock Point mill crew.

- Q. What mills?
- A. Mills were being built in 1859. There was a mill there run by Logan and Holmes, and an arrastra run by Joseph Woodworth and others.
- Q. Where was the Holmes and Logan mill?
- A. That was the Rock Point mill. What is now known as the Rock Point.
- Q. When did you first see the mill or arrastra in operation there where the Rock Point mill now stands?
- A. In the fall of 1859. They were just closing up their works when I arrived there.
- Q. What were they running then?
- A. They were running an arrastra.
- Q. Was there a quartz mill built at the same place afterwards?
- A. Yes, by Moss Hymer and Kustel.
- Q. Did Kustel build there before Holmes and Logan?
- A. No, afterwards.
- Q. Where and when was the first quartz mill built that you remember of on the river?
- A. It was built at the Rock Point in 1861.
- Q. Were you there when they were building it?
- A. I was there often as I furnished goods and merchandise at that place when they were building it." (520, Plaintiff's vol. 1, p. 162)

W.H. Naileigh, a miner, gave the following testimony in 1893:

"I was in the mill when it was running during the flood of 1862. I was in a boat and went over the dam, going down the river. I think the flood was in 1862 or 1863. I was in a scow boat and went over the Rock Point dam. The water was very high and there were some people drowned up the river that year, and mills were washed away." (520, Plaintiff's vol. 1, p. 39)

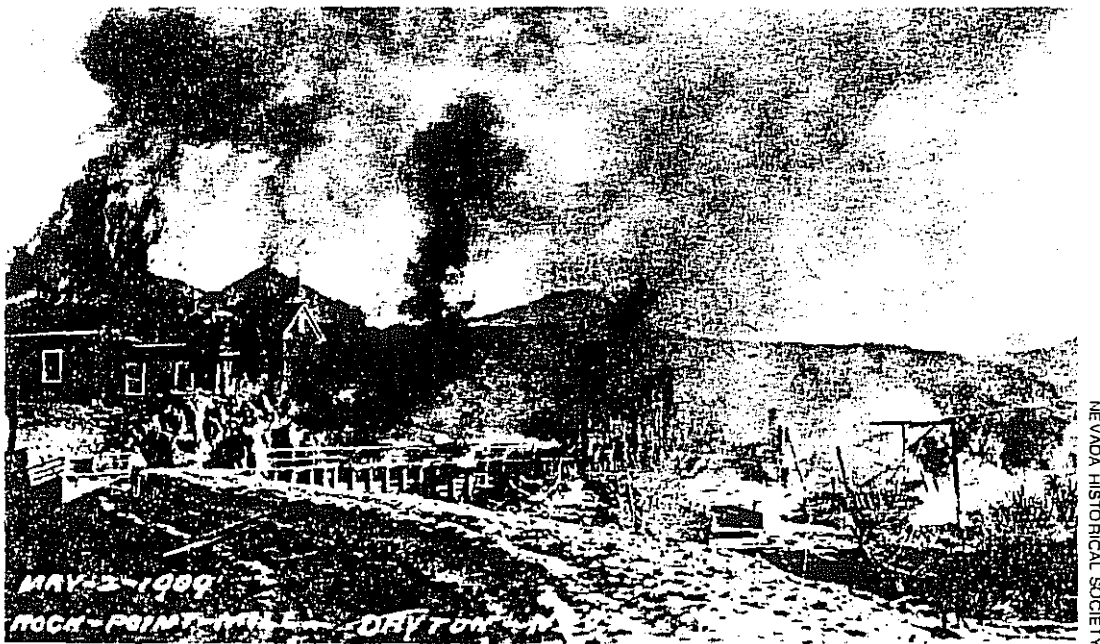
L.H. Taylor described the Rock Point ditch in 1893, as follows:

"The Rock Point mill ditch takes water from the left fork of the Carson River just below the town of Dayton.

The upper portion of this ditch consists of a channel in earth, while for a considerable distance at its lower end the water flows through a box flume eight feet wide at its head and having a depth of 3.83 feet toward the upper end, and 4.10 feet near the penstock at the mill. A section measured just above the mill 387 feet in length has a grade in this distance of 0.04 of a foot, taking the level of high water mark for hydraulic grade, and a mean depth of 3.625 feet. On the inside of this flume are four 1x4 inch battings nailed over cracks, which reduce the sectional area to 28.89 square feet, with a mean radius of 1.8147 feet.

The carrying capacity, with coefficient for roughness 0.012 is 52.73 cubic feet per second, or 2635.5 miner's inches.

The maximum capacity of this flume at the place where measured, taking the grade of the bottom which is 0.295 of a foot in 387 feet, and assuming the flume to have a free discharge, is 150.0 cubic feet per second, or 7500 inches." (520, Plaintiff's vol. 3, p. 190)



Rock Point mill burning, 1909.